The American City

FEBRUARY 1954

Brookline's beautifully designed incinerator, located close to a good residential area, shows that these important sanitation structures can be built to be a credit to the area they serve and that they can operate without nuisance. A two-part story discussing essentials of incinerator design begins on page 126 of the current issue.

Achievements of the

Eleven "All-America Cities" of 1953

are featured on pages 110 to 115.

Maintenance costs have been low on this

33 year old paving

Clark Street, Stevens Point, whose 33 year old Texaco Asphaltic Concrete pavement has received one seal coat.

Main Street's Texaco Asphaltic Concrete pavement has been seal-coated twice since 1921.

The Texaco Asphaltic Concrete pavement on Church Street was given a single seal coat in 33 years.

Stevens Point, Wisc., used old macadam streets as base for new Texaco Asphaltic Concrete surface in 1921. W. F. Reichardt was consulting engineer.

The experience of Stevens Point, Wisc., proves conclusively that an old, well-consolidated macadam street provides an excellent base for a new Texaco Asphaltic Concrete surface. There are a number of Texaco-surfaced macadam streets in Stevens Point, which have been carrying the city's traffic for the past 33 years. Based on their present condition, they will continue to give satisfactory service for some years to come. In addition to local traffic, they are called upon to carry the through traffic of two important State highways.

The cost of maintaining Stevens Point's asphalt-surfaced macadam streets has been low. Several of the streets have been given a single seal coat over the years. Others have been seal-coated twice. The city has expended an average of ½c per square yard per year for the upkeep of most of this 33 year old paving.

Stevens Point is another of the more than 1500 U. S. cities from the Atlantic to the Rockies on whose streets resilient Texaco asphalt paving has demonstrated its durability and low upkeep. Asphaltic Concrete and Sheet Asphalt are the types of Texaco asphalt construction most commonly used on heavy-traffic streets. Asphalt Penetration Macadam provides a durable pavement where satisfactory stone is available. Low-cost Texaco asphalt surfaces of the plant-mix and road-mix types are designed for a city's less heavily traveled streets.

Two helpful booklets for the city official desiring information on the various types of Asphalt street construction can be obtained by writing our nearest office.

THE TEXAS COMPANY, Asphalt Sales Dept., 135 E. 42nd Street, New York City 17

Boston 16 Chicago 4 Denver 1 Houston 1 Jacksonville 2 Minneapolis 3 Philadelphia 2 Richmond 19

TEXACO REG. T. M.

TEXACO ASPHALT

FEBRUARY 1954

The American City

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THAT'S A TRANSISTOR, *invented at Bell Telephone Laboratories.* This tiny electronic device can do many things that vacuum tubes can do and more besides. Though little larger than a coffee bean, it can amplify electric signals 100,000 times.

She's Holding a Five-year-old Granddaddy

The ***Transistor*** was announced only five years ago but it is already the daddy and granddaddy of many promising offspring. All of the growing uses of this tiny electronic device stem from its invention at Bell Telephone Laboratories.

Seldom has there been an invention with such exciting possibilities in telephony and in other fields. A recent issue of *The Reader's Digest* calls it "The Fabulous Midget" and reprints these words from an article in the *Science News Letter:* "In less than half a century, the electronic tube has changed the world. The effect of the transistor on our lives may be equally potent."

The Bell System, in accordance with its established policy of making all of its inventions available to others on reasonable terms, has licensed forty companies to make and sell transistors. These include makers of advanced equipment for defense, as well as radios, television sets, computing machines, hearing aids and electronic apparatus.

One of the first uses of the ***Transistor*** in telephony was in the new electronic equipment which enables telephone customers to dial Long Distance calls from coast to coast.

We can already see the time when it will bring many other improvements in both Local and Long Distance service.

BELL TELEPHONE SYSTEM

LOCAL . . . *TO SERVE THE COMMUNITY.*
NATIONWIDE . . . *TO SERVE THE NATION.*

Our Municipal Notebook

Columbia University Holds Conference on the Metropolis in Modern Life

EXPLORING vital aspects of the role of the metropolis in today's world, Columbia University held, on January 7-9, the first of a series of five conferences to mark the celebration of its Bicentennial. These conferences on varying subjects have as their central theme, "Man's Right to Knowledge and to the Free Use Thereof."

There were eight sessions of this first Bicentennial Conference, which attracted distinguished speakers and some two hundred invited discussants and participants. The subjects of the prepared papers and discussions were:

- The Dynamic Role of the City in Social Development
- The Impact of the Metropolis on the Spiritual Life of Man
- Influence of the Metropolis on Concepts, Rules, and Institutions Relating to Property
- Economic Advantages and Disadvantages of Metropolitan Concentration
- The Influence of Science and Technology on the Metropolis
- Contribution of the Metropolitan Community to the Political Institutions of a Free Society
- The Impact of the Metropolis on the Professions
- The Search for the Ideal City.

Serving as chairman and vice-chairman of the Conference were Ernest M. Fisher and Leo Grebler, director and associate director, respectively, of the Institute for Urban Land Use and Housing Studies. It is expected that a book based on the Bicentennial Conference proceedings will be published later in the year.

Confidence, Optimism, and Public Works

SINCE WE have an economy of abundance rather than necessity, "most of the things people buy are deferable," Crawford H. Greenewalt, president of the DuPont Company points out; and whether or not there will be a recession will depend largely upon the direction of the national psychology and on decisions that are influenced less by rational economic reasoning than by simple confidence and optimism."

Addressing the Commonwealth Club of San Francisco on January 22, Mr. Greenewalt urged that business maintain its own confidence high and "its own economic temperature as near normal as possible."

By adopting a similarly constructive point of view, THE AMERICAN CITY suggests, municipal officials can help their home towns and the national economy by stimulating rather than deferring the planning and placing of contracts for needed public buildings and public works.

As Mr. Greenewalt said in his San Francisco speech, if we are to avoid stagnation, "we must most of all keep alive that spirit of confidence and optimistic venture that has been so fruitful in the past."

Finer Cities Through Citizen Cooperation

FORWARD-LOOKING municipal officials have good cause to acclaim the growing desire of public-spirited men and women to serve their home towns on official boards and commissions or in organizations of citizens for advancing the public welfare.

This helpful trend has had striking demonstration in the annual "All-America Cities" contest of 1953, sponsored jointly by the National Municipal League and *Look* Magazine.

The names of the eleven winners in the 1953 contest having been released for February 1954 publication, THE AMERICAN CITY is glad to present (on pages 110-115 of this issue) brief abstracts prepared especially for this magazine from the lengthier statements presented in November last at the National Conference on Government, in Richmond, Va.

As might be expected, these awards were based on a wide variety of activities, initiated or aided by citizen effort.

In one city an over-subscribed building-fund campaign for a hospital gave impetus to many other much-needed public and private improvements.

In the smallest city to win an award, organization of a "Planned Progress Program," with the cooperation of the city government, has brought about the building of a new fire house, modernization of an old city hall, installation of an improved

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VOLUME 69, NUMBER 2 •

Back of every CAT* Motor Grader stands a better road

A 75-HP Cat Diesel No. 112 Motor Grader maintains streets in Greenwood, Miss.

Reliable Caterpillar equipment leaves a special trail of good works behind—good roads. That's why cities all over the country rely on these machines for their road-building and maintenance operations.

Here in Greenwood, Miss., for instance, four pieces of Caterpillar-built equipment have joined the Greenwood fleet. Their most recent purchase, the No. 112 Motor Grader shown in the picture, is also used extensively for blading cold-mix asphalt, ditching and sewer back-filling.

No wonder many cities are standardizing on this equipment.

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- Clear view of the blade and wheels from the driver's seat.
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- Positive starting engine—that means sure starting in any weather.
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- Rugged box-section drawbar circle—heavy and strong for long life.

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street-lighting system, black-topping of 80 miles of streets, and other improvements that will make the city a much more attractive place in which to live.

Another city has, through citizen action in the past decade, obtained a fine educational program, achieved great improvement in public works, adopted a home-rule charter, undertaken a city-parish, long-range plan, worked out methods of financing the growing costs of government, formed some 400 prayer groups, and completed a survey of the city's Negro community.

The stories of these and of the nine other "All-America Cities" make stimulating reading—and, it is hoped, will give added impetus to citizen cooperation with public officials for community betterment, physical and social, in many a city, town, and village.

89 Communities Join Council Manager List in 1953: Total is Now 1,225

EIGHTY-NINE additional communities in the United States and Canada turned to the modern council-manager form of government in 1953, the National Municipal League has announced. The League reported that 1,225 local governments north of the Mexican border had the plan at the end of the year.

The record rate of adoptions each year since World War II indicates the council-manager plan will become the prevailing form of local government within the next decade, the League's report said. Adoptions in 1953 of the manager plan, generally described by authorities as the ideal way to run communities, were exceeded since the war only in 1947 and in 1948 when there were 91 and 95, respectively.

About 40% of all American communities with populations over 25,000 now have the plan, as do about one-third of those between 10,000 and 25,000.

California led all states in adoptions last year with 10 communities voting in the plan. Florida and Illinois were second and third. Three Alaskan cities joined the list.

Largest city to approve the plan was Sioux City, Iowa, with a population of 84,000. Cincinnati (504,000) is the largest council-manager city today; Teterboro, N. J., (28) the smallest.

Although council-manager government is most popular in Maine, where 119 communities have the plan, California is a strong second with 113. Texas is third with 98, followed by Michigan with 93, Virginia and Florida, each with 65, Pennsylvania with 58, North Carolina with 50, and Oklahoma with 46.

$32,500 in Prizes for City Planning Ideas

TO PROVIDE an inspiration and practical plans for the improvement of Chicago's Central Commercial District, a leading department store of that city announces, in this issue, a Centennial Competition in City Planning, with awards totaling $32,500.

THE AMERICAN CITY acclaims this recognition by Carson Pirie Scott & Company of the probable benefits to be derived from focusing constructive city planning thought on increasing the efficiency of the vital focal point of trade in a metropolitan region.

Studytour to Europe

THE PLANNING and Housing Division of the School of Architecture at Columbia University is offering a summer studytour to selected urban areas in Europe, under the direction of J. Marshall Miller, Associate Professor of Planning at the University.

The course (Planning s159), Contemporary Urban Planning and Development in Europe, may be taken for credit toward a degree.

London, Coventry, Birmingham, Liverpool, Edinburgh, Glasgow, Newcastle, Bergen, Oslo, Stockholm, Gothenburg, Copenhagen, Aarhus, Bremen, The Hague, Rotterdam, Amsterdam, Hilversum, Antwerp, Brussels, Liege, Reims, and Paris are among the cities to be visited.

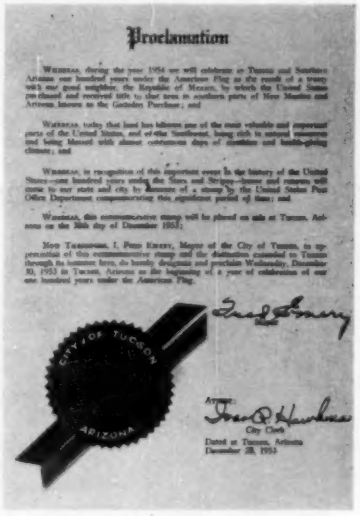
Applications must be approved and a deposit paid before April 1, 1954. For additional information, address Professor J. Marshall Miller, 504 Avery, Columbia University, New York 27, N. Y.

Tucson, Ariz., Celebrates Gadsden Purchase

ONE HUNDRED YEARS ago—on December 30, 1853—Mexico sold to the United Sates nearly 30,000,000 acres of land at a cost of $10,000,000—or about 33 cents per acre.

The bulk of the land was within the boundaries of the present State of Arizona, and the primary value of the purchase at that time was in that it provided a southern route for a transcontinental railroad to California. The purchase was named after James Gadsden, United States Minister to Mexico, who conducted the original treaty.

To celebrate the 100th anniversary of the Gadsden Purchase, a commemorative stamp was issued and a "First-Day-of-Issue" ceremony was held at the Pima County Courthouse in Tucson, Ariz., on Wednesday, December 30, 1953. Mayor Emery of Tucson, the oldest and largest city in the Gadsden Purchase, issued a proclamation (here reproduced in miniature) designating December 30 as the beginning of a year of celebration of Tucson's 100 years under the American flag.



Proclamation

WHEREAS, during the year 1954 we will celebrate in Tucson and Southern Arizona one hundred years under the American Flag as the result of a treaty with our good neighbor, the Republic of Mexico, by which the United States purchased and received title to that area in southern parts of New Mexico and Arizona, known as the Gadsden Purchase; and

WHEREAS, today that land has become one of the most valuable and important parts of the United States, and of the Southwest, being rich in natural resources and being blessed with almost continuous days of sunshine and health-giving climate; and

WHEREAS, in recognition of this important event in the history of the United States—one hundred years under the Stars and Stripes—there will come to our state and city by issuance of a stamp by the United States Post Office Department, commemorating this significant period of time; and

WHEREAS, this commemorative stamp will be placed on sale at Tucson, Arizona on the 30th day of December 1953;

NOW THEREFORE, I, Fred Emery, Mayor of the City of Tucson, in appreciation of this commemorative stamp and the distinction extended to Tucson through its issuance here, do hereby designate and proclaim Wednesday, December 30, 1953 in Tucson, Arizona as the beginning of a year of celebration of our one hundred years under the American Flag.

Fred Emery

CITY OF TUCSON ARIZONA

Attest: Frank D. Hawkins
City Clerk

Dated at Tucson, Arizona
December 28, 1953

At the courthouse ceremony, Robert E. Fellers, Director of the Division of Philately of the United States Post Office Department, presented stamp albums to various celebrities, including Governor Howard Pyle of Arizona and Mayor Emery. Both Governor Pyle and Mayor Emery addressed the gathering.

OVER 500,000 WASTE KING *PULVERATOR* GARBAGE DISPOSERS ARE IN DAILY USE THROUGHOUT AMERICA

Chosen on the basis of individual preference!

This is the basis of the Community-wide Garbage Grinder Plan for cities suggested by WASTE KING *Pulverator*, America's Finest Garbage Disposer.

WHAT THE PLAN IS—

The Garbage Grinder Plan is based on the American tradition of free enterprise and the right of the individual to choose the product he wants by type, brand, model and features. The Public Official sets the plan in motion by: 1) adopting ordinances to permit installation of garbage grinders, 2) preparing ordinances requiring installation of garbage grinders in homes and food service establishments for community sanitation, 3) permitting free choice of grinders.

WHAT THE PLAN DOES—

- Eliminates existing, inadequate and costly unsanitary garbage collection and disposal.
- Provides a modern sanitary method of eliminating garbage at the "point of origin" by community-wide installation of garbage grinders.
- Sets a higher standard of community and individual health and sanitation.
- Lowers taxes. Improves community beauty . . . no garbage cans, no garbage trucks.

All new WASTE KING Pulverator with Super "Hush-Cushions!" Quietest, fastest operating.

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America's largest producer of garbage disposers for the Home and Food-Service Industry!

Principles for City Rebuilding and Dispersal

THE MAJOR PRINCIPLES of a proposed pattern for building future cities, as well as for the redevelopment of existing large congested metropolitan areas, were presented before a distinguished group of specialists in various fields at a meeting of the Regional Development Council of America in New York, January 6. The principles, outlined by Clarence S. Stein, city planner, were illustrated by schematic drawings and by examples of existing developments such as Greenbelt, Md., and Kitimat, B. C.

The main points of this "Regional Pattern for Dispersal" are as follows:

1. A regional city will be a constellation of moderate-sized communities, separated by great open areas bound closely together by townless highways (i.e. throughways, turnpikes, and parkways).

2. It will be planned, developed, and operated as a regional entity.

3. Working places will be distributed in numerous towns and open places, so that there will be adequate and varied opportunities of employment convenient to all workers' homes.

4. The open areas between towns, while serving for spacious recreation, will be used mainly for farms, woods, and grazing. Thus much food may be produced as close to markets and consumers as is practical geographically and economically.

5. The towns in a regional city will have varied functions, character, forms and sizes. Each will be large enough to support all the day-to-day activities and equipment of a contemporary American community. All towns will be small enough to foster local loyalty and pride, as well as closeness to countryside.

6. The total population of a regional group of towns and farms will be adequate to utilize and support central facilities equivalent to those provided by a *great* metropolis of today. This includes the best of universities, hospitals, museums, libraries, laboratories, wholesale markets, business centers as well as auditorium, symphony hall, theatres, and an equivalent of the "great white way."

7. These main central facilities will be in various towns, each of which will serve one or at most a few related functions. Thus traffic loads will be limited and balanced and the deadening congestion of the obsolete metropolitan centers may be done away with.

8. The time distance to all its main centers from any part of a regional city will be less than that from vast outlying areas of a present-day sprawling metropolis to its congested multipurpose center.

This is possible because the greater part of the journey will be by townless highways, safely speeding through open country, with adequate terminal facilities in each town.

Toward the "Regional City"

THE *St. Louis Post Dispatch*, in its 75th Anniversary Supplement, presents a challenging discussion on the subject "Break-Up of the Cities," which was written by Harry Wilensky, and illustrated by Hugh Ferriss.

In posing the problem, the *Post* staff writer declares: "American cities are in trouble. Like giants stumbling over their own feet, unable to make their great strength count because of lack of coordination,

An imaginative concept by Hugh Ferriss of how the heart of a modern city might be organized. At the lower right is a regional shopping center with a residential project immediately above. The major business section lies in the pie-shaped wedge between the two river forks. A modernized hospital is at lower right center. Other main features of the community are the circle of parks, a university, an amphitheater (left center), an airport (top center) with rural truck gardens at its left, and the main industrial section (top right). This drawing is reprinted from the 75th Anniversary Issue of the *St. Louis Post-Dispatch*. (Copyright 1953, The Pulitzer Publishing Company.)

Reduce your SWEEPING COSTS

WITH **MOBIL - SWEEPER**

GET Top Performance AT LOWER COST!

Discover new ways to save money on street sweeping, airport sweeping, and highway sanitation with the big Mobil-Sweeper. Savings of 45% over all previous methods of street sanitation are being reported by Mobil-Sweeper users. Learn more about what communities across the Nation report on actual experiences with this fine sweeper. Many communities say maintenance and upkeep costs are the lowest on record. Manpower requirements are lower too.

Mobil-Sweeper can change street sanitation into a one-man job. Traveling to-and-from the dump at top traffic speeds, Mobil-Sweeper eliminates need for a truck and pick-up crew to follow. Where central dumping is used, Mobil-Sweeper's big hopper capacity makes it a top performer in this system.

You can't overlook safety—a covered cab with shatter-proof windshield gives protection to your operator . . . places him in a position for better visibility—as attested by leading automotive engineers. Four wheel hydraulic brakes are a must on heavily loaded vehicles—Mobil-Sweeper has them.

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they are floundering in the face of destructive forces which menace the entire economy and present a challenge to democracy itself."

Pointing out that the city is breaking up, splintering into dozens of municipalities in a "metropolitan sprawl," Mr. Wilensky shows that decentralization is becoming a dominant force, and promises to continue. Cities must take steps to guide the movement rather than let it run wild. Highway planning, improvement of mass transit, creation of building zones, smoke control, and public health measures clearly require coordination.

In conclusion, the article declares:

> There is a school of thought which holds that cities, as they grow beyond limited size, become less desirable for living and less efficient for industry. Clarence S. Stein, a leading exponent, considers a community of 25,000 to 50,000 population the optimum size, and is convinced that the inhabitants can have the advantages of the big city if a group of such towns is integrated into a regional pattern. . . .
>
> Meanwhile, Mr. Stein would have the big city eradicate the most decayed areas, replace blight at the core with green, preserve its main sections, and free circulation with a circumferential highway. . . .
>
> The regional city may well be in the making, a constellation of communities whose boundaries cease to be barriers and whose individual interests are subordinated to the common welfare through the vitality and flexibility of Twentieth Century democracy.

New Booklet on Minimum Housing Standards

AN AID TO CITIES interested in developing and enforcing minimum housing standards as a means for improving and conserving their housing supply is provided in "Local Development and Enforcement of Housing Codes," issued by the Housing and Home Finance Agency. Prepared from materials assembled by Syracuse University under contract with HHFA's Division of Housing Research, the 55-page report is available for 40 cents from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

A Significant Trend in Real-Property Taxation

"IT HAS LONG been recognized by students of economics that the general real-property tax, levied upon both site value and improvements, which is employed by most of our metropolitan communities as their principal source of revenue, is a regressive tax which tends to deter improvement and to encourage continued exploitation of outmoded facilities. The beginnings of a trend toward the utilization of this insight may be observed both in the increasing use of various exemptions and concessions to secure desired housing and industrial developments and in the deliberate differentiation in a few communities of the burden on site-value from that on improvements, in what is called a "graded" tax. The full use of this insight in the conscious and systematic manipulation of land tax policies to promote desired, and to deter undesired, developments in land use and ownership remains, however, for the future."

MYRES S. McDOUGAL
Professor of Law, Yale University

EDITORIAL NOTE: From a paper on "The Influence of the Metropolis on Concepts, Rules, and Institutions Relating to Property," presented at the Columbia University Bicentennial Conference on "The Metropolis in Modern Life," January 7-9, 1954.

From the President's Budget Message: Excerpts Affecting Local Governments

FEW MAJOR recommendations for change affecting municipal governments were contained in President Eisenhower's Budget Message to Congress on January 21 for the Fiscal Year 1955. The President did come forward on January 25, in a special Housing Message to Congress, with several new proposals for legislation in that field, substantially as outlined in the budget message.

Same excerpts from the budget message follows:

Urban development and redevelopment

"Most local projects approved by federal assistance are still in the planning stage, but by the end of the fiscal year 1955, clearance and redevelopment operations will be completed or under way for 180 projects, compared to 43 projects begun by June 30, 1953. Net expenditures in 1955 are estimated to rise to $48,000,000, of which $39,000,000 represents grants to local communities to cover two-thirds of the net cost of projects which they have completed, or on which they have made substantial progress.

"This acceleration is encouraging, but clearing slums provides only a partial answer. Effective progress in redeveloping our cities will require:

1. Enlistment of greater local and private participation.
2. Slum prevention as well as elimination.
3. Rehabilitation of rundown houses and neighborhoods.

"All of these aids should be fully coordinated and should be provided only in areas where the local community has adopted and is carrying out its part of an effective program to arrest urban decay."

Public housing

". . . the present public-housing program should be continued at the level considered necessary to meet the needs of low-income families, particularly those displaced by slum-clearance and urban rehabilitation activities.

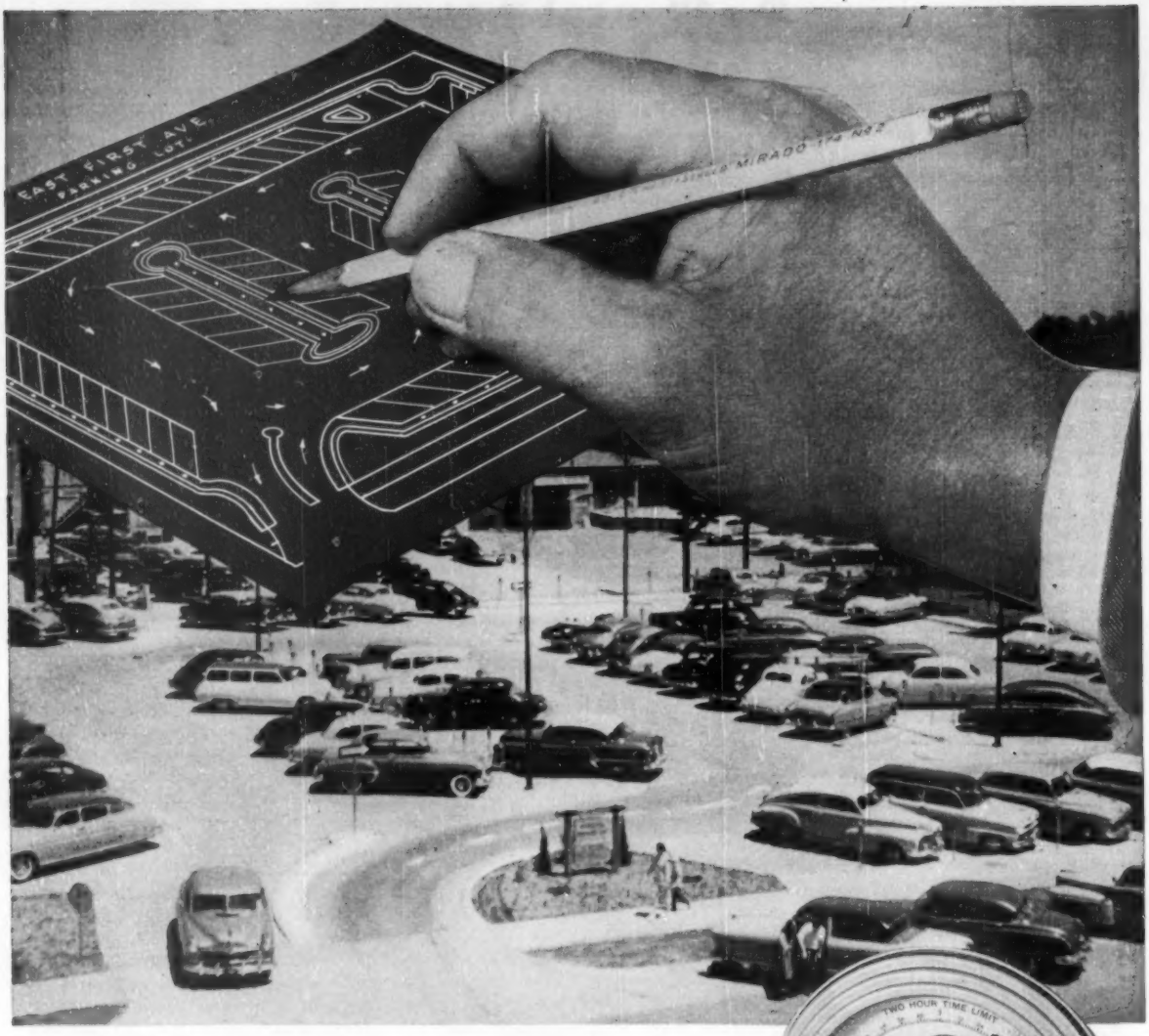
". . . Accordingly, my recommendations for the fiscal year 1955 in this budget would authorize construction of approximately 35,000 low-rent public-housing units by local housing authorities, with the assistance of federal loans and annual contributions adequate to assure the low-rent character of these projects. '

Advance planning of local public works

"To encourage state and local governments to prepare for possible future expansion in public works construction, I am recommending legislation to authorize federal advances to them for planning future construction. If the authority is granted, I shall request a supplemental appropriation for the fiscal year 1954 of $10,000,000, with estimated expenditures of $3,000,000 in 1955."

Civil defense, highways

The President's budget called for civil defense expenditures of $68,000,000 in the fiscal year 1955, compared with $75,000,000 in fiscal 1954, and $51,000,000 in fiscal 1953; $555,000,000 is allotted for the federal aid highway program.



HUTCHINSON, KANSAS lot 160' x 165' equipped with 86 DUNCAN-MILLER 3-hour meters at the rate of 90-min. for 5¢ or 3-hours for a dime.

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Responsibilities of Health Officers in Eradicating Slums

By AARON H. HASKINS
Health Officer
Newark, N. J.

ELIMINATION OF SLUMS is not a health department problem alone; it requires the efforts of all agencies interested in the eradication of blighted areas. These include: (1) Housing Authorities and Urban Redevelopment Agencies; (2) Zoning Department; (3) Building Department; (4) Fire Department; (5) Welfare Department; (6) Representatives of the civic interests of the city; (7) Representatives of the financial interests of the city, and (8) Health Department.

Such a group working together in a master plan to eliminate slums cannot fail to be successful, particularly if each agency will give its full support, each working in its own sphere yet contributing its "know-how" to others for the common good. It is here that the first of the responsibilities of the health officer presents itself. He should take a leading part, if not THE leading part, in the formation of such a group.

Enforcement of housing codes alone can never eradicate slums. It is too small a tool to do so big a job. Many slum properties are beyond rehabilitation and it would be economically unsound to insist on rehabilitation. They are unfit for human habitation and should be demolished.

If the owners of slum property were made to realize by court action that they cannot rent properties unfit for human habitation, the profit in slums would become a deficit and a long step would be taken in the elimination of blighted areas.

The next responsibility of the health officer lies in the field of slum prevention. The burden of this part of the program falls almost entirely on the health officer. Here is where the enforcement of housing codes can be most effective, for it not only prevents slums from developing but contains the slums already present within the community. If his community has no housing code, the health officer should take a leading part in developing one. It takes only one bad house on a block to start deterioration going, and it takes only one bad block in a neighborhood to develop a blighted area. It is important to stop the beginnings of slums by strict enforcement of the housing codes.

One of the great causes of blighted areas is improper enforcement of zoning laws. Too many variances are given, particularly where rooming houses are concerned. An improperly operated rooming house is an important cause for blight.

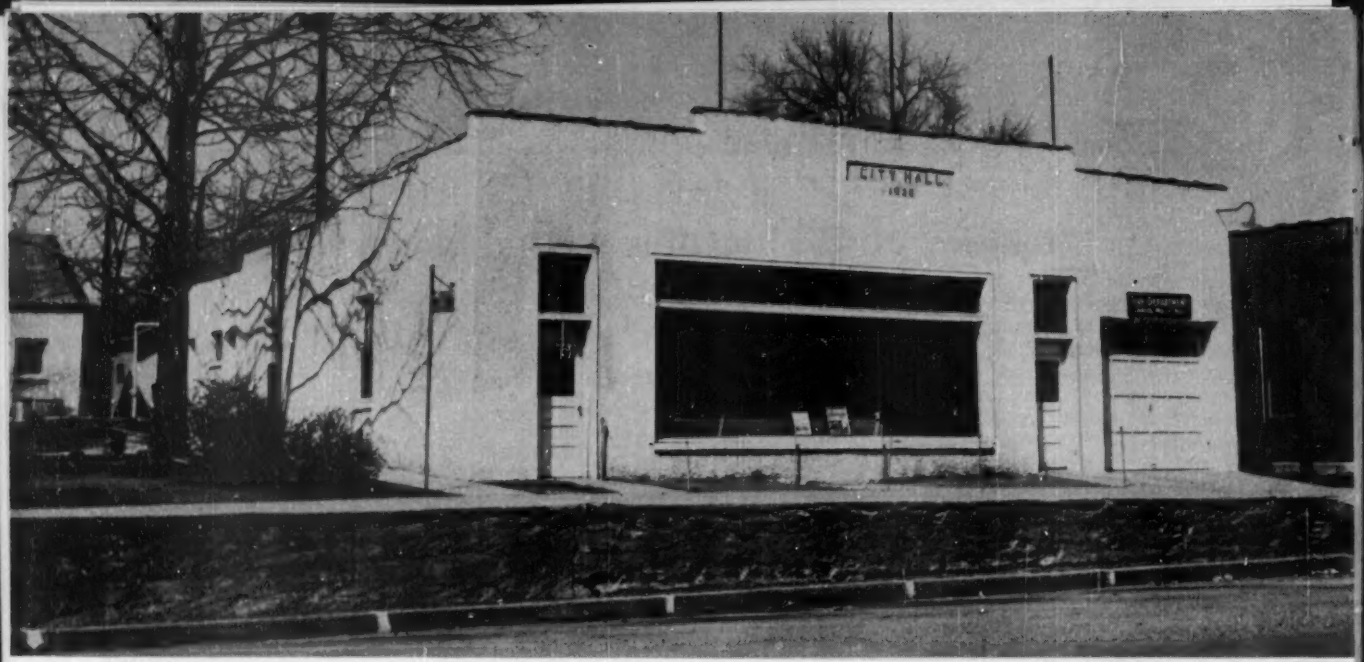
In Newark, I have seen rooming houses outside the so-called slum belt where overcrowding and sanitary violations exist to a flagrant degree, where rooming-house operators prefer to pay a fine rather than abate a nuisance. The only way to drive out this type of unscrupulous operator is to have rooming houses licensed so that habitual violators may be driven out of the business. This, again, is another responsibility of the health officer.

We have seen, in the past few years, large low-income housing projects rising over areas where formerly nothing but blight existed. A welcomed sight, indeed! But often there is a woeful lack of knowledge on the part of the tenant as to his responsibilities. It is vitally important that a program of health education, sanitation, and tenant responsibilities must go on simultaneously with the building of new projects. In this field, the health officer, in cooperation with housing authorities, can play an important part. He can develop a program which will stimulate tenants to have greater pride in their environment and thus prevent the development of slums.

EDITORIAL NOTE: This article is from an address at meeting of New Jersey League of Municipalities, Atlantic City, N. J., November 19.

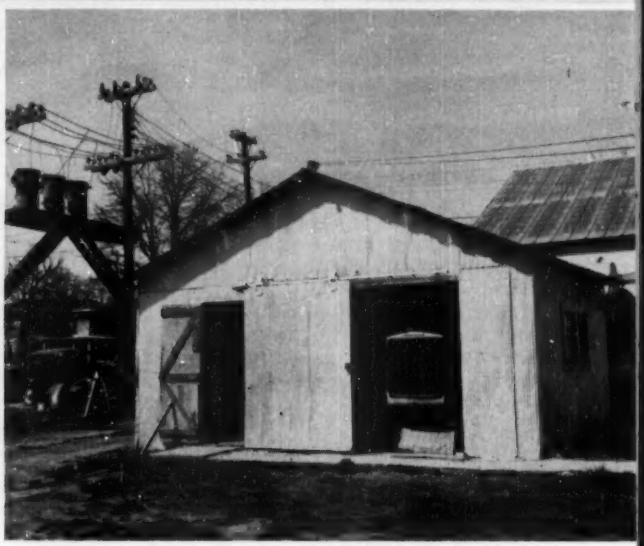
"Now, everyone eat all that salad. The garbage disposal unit is out of order."

CARTOON COURTESY NEW YORK DAILY NEWS



The POWER behind City Hall

(and that isn't all)



The lights will never go out in the City Hall of Cabool, Missouri, for lack of electricity. Behind the regular source, a Cat* D318 Electric Set serves as standby power, ready to go into action in any emergency. This set also insures the city's telephone service and water supply against power failure.

Purchased by the city during an emergency, the D318 has since then proved its usefulness on several other occasions. Besides its reliability, it has many other advantages to recommend it. These advantages are common to *all* Caterpillar Diesels. For example, they take up little floor area and are easy and inexpensive to install—no heavy concrete foundations or costly overhead construction required. When installed, they're easy to run—you don't have to pay high-salaried mechanics or operators to look after them. Another saving: when running, they use low-cost No. 2 furnace oil *without fouling*. That means cheaper fuel, less of it, less maintenance and less down time. And if you need service, you can count on it fast—any hour of the day or night—from your Caterpillar Dealer.

There's a unit or combination of units *just right* for your requirements—electric sets and engines in 12 sizes up to 315 KW and 500 HP. Honestly rated, they deliver all the power shown in the specification sheets. Ask your Caterpillar Dealer to *prove* they're a good investment for your city!

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The Churches' Concern For Housing

A STATEMENT on this subject was adopted by the General Board of the National Council of the Churches of Christ in the U. S. A., assembled in Washington, D. C., November 18, 1953. The statement included the following two paragraphs of interest to local officials:

"We also appeal to church members to support all sound and effective measures for a comprehensive national housing program coordinated by one federal agency, and for the development of well-planned, integrated, and non-segregated residential neighborhoods. Sound planning should contribute to slum clearance with adequate relocation service, urban redevelopment which will lessen population density in the congested portion of cities, modernization of outmoded restrictive building codes, and subsidized housing for the low-income portion of the population.

"Without passing judgment on specific legislative proposals, support should be given to the general principle of assistance by federal, state, and local governments in the solution of the national housing problem. We believe that even with federal help, local responsibility and action are fundamental to a successful attack upon the nation's slums. Community-wide forums sponsored by churches and other groups concerned with community participation in public low-rent housing, slum clearance and urban redevelopment, and cooperative housing programs have proved helpful by imparting a wider understanding of housing problems, of enabling legislation, and of requirements for participation of communities in federal and state housing programs."

National Municipal League Fellowship at Harvard

ESTABLISHMENT of a National Municipal League Fellowship in the Advanced Management Program at the Harvard Graduate School of Business Administration has been announced by the League and the Harvard Business School.

The Fellowship will help men with substantial experience in public administration in local or state government to participate in a program which until now has been confined to business executives and some administrators in the federal government.

The Advanced Management Program is an intensive course of study for mature, experienced administrators, usually between the ages of 38 and 48. It is intended for men who already have important positions and are considered capable of occupying positions of even greater responsibility and influence in the future.

The course runs for 13 weeks. A holder of the National Municipal League Fellowship may attend either of two sessions, one from the middle of September to early in December, the other from late February to late May. One Fellowship will be awarded each year.

Total cost of the 13-week session, including personal expenses, amounts to approximately $2,500. The Fellowship carries a stipend of $1,500, provided by Mr. and Mrs. Preston Farley of Evanston, Ill. The object of the grant is to facilitate participation of state and local administrators in the program on a comparable basis with executives from private industry whose companies customarily pay the bill as well as their salaries during the training period.

Littauer Fellowships Also Available

THE GRADUATE SCHOOL of Public Administration of Harvard University has announced the availability of several Lucius N. Littauer Fellowships, carrying stipends up to $2,100, for men who have already had some experience in the public service, and Administration Fellowships, carrying stipends up to $1,200, for recent college graduates who intend to enter the public service.

Applications should be filed by March 15, 1954. Further information may be obtained from 118 Littauer Center, Harvard University, Cambridge 38, Mass.

Negro Engineer Appointed New York City Commissioner of Water, Gas and Electricity

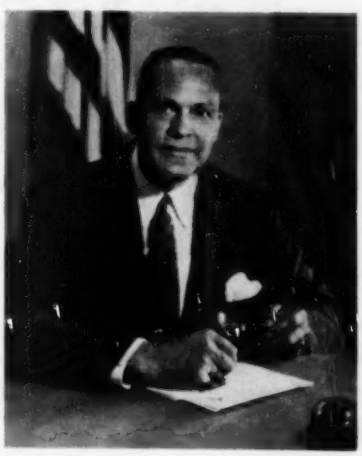
ARTHUR C. FORD, the first Negro in New York City's history to be a commissioner, was named by Mayor Robert F. Wagner, Jr., on January 21 as the new Commissioner of Water Supply, Gas and Electricity.

Mr. Ford, who holds an Engineering degree from Montana State College, has been with the city since 1924, serving first as structural steel draftsman with the city's Board of Transportation, and then as civil engineer in the Department of Public Works and Sanitation.

In 1950 he was named to the position of consulting engineer in the office of the Borough President of Manhattan, and was also Manhattan Borough Chief in the office of civil defense in the public works emergency division.

As consultant to the Borough President, Mr. Ford reviewed, advised on, and approved all structural plans, serving as liaison and coordinator of work on the planningand administrative level with other city agencies.

Mr. Ford, who is 62 years old, will receive $15,000 per year as head of the Department of Water Supply, Gas and Electricity. He is a member of the New York State and the National Societies of Professional Engineers, the Municipal Engineers of the City of New York, and the National Technical Association.



BLACKSTONE STUDIOS

Arthur C. Ford, newly appointed Commissioner of Water Supply, Gas, and Electricity for the City of New York.

CITY GOVERNMENTS ACROSS THE WORLD!

RECOGNIZE ROTO-PAC'S FASTER, MORE EFFICIENT MORE ECONOMICAL PERFORMANCE

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N. Y. C. HAS ADDED 370 NEW ROTO-PACS TO ITS ALREADY LARGE ROTO-PAC FLEET

CALENDAR
of the
BOARD OF ESTIMATE
of the City of New York

May 11, 1953

180

The Department of Sanitation in support of its preference for the escalator compactor body cites the following among its reasons:

1. Universal use of the unit on all types of collection service at maximum efficiency. Unit can be assigned to any collection route whether on straight ashes, garbage or mixed refuse. This flexibility of assignment is especially important in the light of the extension of the incinerator program and the separation of ashes.

2. Due to a smaller hopper opening there is less spillage both on the part of the loaders and as a result of winds. Likewise the operation is more sanitary since the loaders are not exposed to the refuse and odors as is the case on a batch-type large hopper.

3. Batch-type unit is a single purpose truck for mixed material and not fully satisfactory for straight collection of ashes.

4. As a continuous loader, the escalator compactor unit daily payload performance is greater than the batch-type unit.

5. During a comparable nine month period of the term of the manufacturer's guarantee on the latest delivseries of 210 escalator-type and 140 batch-type units the average percentage of lost days due to repairs to days assigned to district garages in the case of the escalator-unit equalled only 1.8% while for the batch-type the average percentage was 19.5%.

6. The Consulting Engineers employed by the Mayor's Committee on Management Survey to study the operations of the Department of Sanitation recommended that the escalator-compactor type collection truck become the standard collection unit for future purchases.

7. It is the Department of Sanitation's intention to standardise its refuse collection truck fleet on the escalator type...

FOR FURTHER INFORMATION OR A DEMONSTRATION WRITE

There is nothing faster or more efficient in refuse loading than automatic, continuous loading and packing

There is nothing faster or more efficient than ROTO-PAC

CITY TANK CORP.

53-09 97th PLACE

CORONA, LONG ISLAND, N. Y.

How Seven Maryland Cities Solved Their Sewerage Problems

False Storm Flows

In CAMBRIDGE, a municipality of 10,500 in central Maryland, city officials were astonished by storm flows which appeared repeatedly during periods of dry weather. Investigation turned up structural defects in some of the manholes that were causing the sewage discharges. These were corrected by city forces.

Activated-Sludge Treatment

IN HAGERSTOWN, a city of 36,500 in the northwestern corner of the state, activated-sludge treatment was promoted from part-time to steady employment. The sewage-treatment plant formerly provided primary treatment only during the winter months and operated its activated sludge units during the warm weather. Increased sewage flows indicated the desirability of supplying this greater purification throughout the year, and the city has adopted this policy.

Standby Power To Prevent Outages

AT TOWSON, a city of 15,000 in the northern part of the state, near Baltimore, standby power proved necessary after all. When the sewage pumping station was north of town several years ago, it was equipped with a tank to hold the sewage during periods of power outages, thus preventing the sewage from overflowing into a small stream nearby which ran to a raw-water reservoir.

Some difficulties were experienced, however, when a prolonged and unanticipated power outage occurred on several occasions which permitted the sewage to overflow the tank into the stream. The first step in overcoming the difficulty was the installation of signal lights and automatic telephone communications to detect spillages. But spillage continued despite these precautions. Finally, standby power, in addition to signal warnings, is being provided by Baltimore County Metropolitan District authorities.

Authority Management

AT WALDORF, in the south central part of the state, the logical answer to this unincorporated community's sewerage problems was authority management. Both water and sewerage are needed here and preliminary plans and cost estimates are currently being prepared. The water and sewer authority under existing law would be the only means to construct and operate these facilities.

Flooded Cellars

IN LOCH RAVEN, a small village north of Baltimore, residents were plagued with flooded cellars. This situation created not only a nuisance but a health hazard because of a combined storm and sanitary sewerage system. The condition resulted from an intensified home-building program and excessive periods of rainfall during the year.

However, the county authorities have initiated a program of relief-sewer construction and have completed plans for sewers along Chinquapin Run to reduce surcharging the main trunk that serves the area.

A State Order Persuades Community

MIDDLETOWN, a little municipality in northern Maryland, west of Frederick, required a state order to persuade the community that an adequate sewer system and sewage-treatment plant would have to be built. The lack of these sanitation facilities has been a matter of concern to the State Department of Health for many years. Finally, an order was issued to Middletown to abate the nuisance conditions by July 1, 1954.

A Misunderstanding

SALISBURY, a city of 15,200 in southeastern Maryland, became confused about the adequacy of the treatment plant that had been designed for the city. Since this has been clarified, basic design data that will satisfy all concerned have now been approved, and a sewage-treatment program is advancing on schedule.

Doubtful Designs Rejected By Public

AT TANEYTOWN, a town of 1,500 people near the north central state line, doubtful designs fell by the wayside. Plans for a sewer system and treatment plant included shallow sewers that drained only about 30% of the residential basements by gravity. Had these sewers been constructed according to these plans, the remainder of the homes would have had to provide sump pumps or ejectors to lift the sewage from basement fixtures.

The problem was discussed at a public meeting and resulted in the defeat, by referendum, of the system that was to be built according to these designs.

EDITORIAL NOTE: This information has been prepared with the cooperation of the Maryland State Department of Health and the cities involved.

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is building good will for city officials
in more and more communities.

IT REALLY WORKS

The Traf-O-Teria System is a simple, courteous and effective method of assessing, collecting, and accounting for parking meter fines. It consists of overtime parking notice coin envelopes with serially numbered duplicates and weatherproof courtesy collection boxes.

The System brings these proven benefits:

- Better public relations, more good will—as the "sting" is removed from paying parking meter fines.
- Voluntary, prompt payment of a much higher percentage of fines.
- Substantial net savings in clerical, police officer and court time.
- Establishment of a simple, near-automatic, accurate set of controls for parking meter fines, easily administered by clerical workers.

TRAF-O-TERIA SYSTEM
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Mail Today for Free Information

Please tell me how Traf-O-Teria builds good will and how much it costs.

Name ..... Title .....

Address .....

City ..... State .....

Street Cleaning & Refuse Disposal

Sanitary Fill Makes Park Entrance

WITH THE COMPLETION of a sanitary fill in Jackson, Miss., a new park entrance will be possible where it wasn't practical to build one until a few years ago. When the entrance is complete, park visitors will be able to walk and drive over paths built upon layers of compacted refuse.

This is only one of the improvements that the Jackson sanitary fill work is making possible. For as long as Jackson has been a city, it has had to contend with the nuisance of low waste areas that restricted city development. The advent of sanitary fills has changed this picture.

The fills receive refuse contributed by roughly 100,000 people, an annual load of 37,000 tons of refuse. Three fills operate at once for the convenience of collection crews. The fills, which cover an area of 20 acres, are built by the ramp method of fill-and-cover. This type of operation is the most recently developed of the methods of building a sanitary fill and is well suited to gently rolling land.

A diesel crawler tractor with a Drott Bullclam shovel is assigned to each fill. Two men work at each

fill, one on equipment and one as a helper.

The finished fills receive a cover of 2½ feet of earth which is carefully graded. In five years, settlement has been less than 1 foot over the entire layer.

The work is directed by H. B. Milstead, superintendent of sanitation.

EDITORIAL NOTE: THE AMERICAN CITY is currently publishing a special series of articles dealing with particular phases of sanitary-fill operation; the first installment appeared in the December 1953 issue. The articles and the above information are based on a survey of all sanitary fills now in use that have been identified as such by responsible health authorities. For this month's feature see pp. 102-105.

Three Sweepers— 200 Miles of Streets

PORTLAND, MAINE, finds that three Elgin sweepers can keep its 200 miles of streets clean if the street-cleaning operation is scheduled carefully. Only two sweepers are used and the third is a spare.

The machine sweepers function both in the business and residential areas. The 19 miles of downtown areas are cleaned both by whitewings and mechanical sweepers that reach every street once every two weeks.

The city has been divided into 21 districts. The sweepers average 15.3 curb miles in 8 hours of operation. After each shift, the operator turns in a record of the sweeper dumps made, and a Hough Payloader then follows this course to pick up the debris and load it into trucks. The sweepers in any one district centralize their dumping operations as much as possible to reduce the amount of pick-up required. The trucks take the debris to the city dump where it will cover the refuse.

Street-cleaning operations are scheduled for May 1 to November 1. Work is directed by Commissioner Bryan O. Whitney.

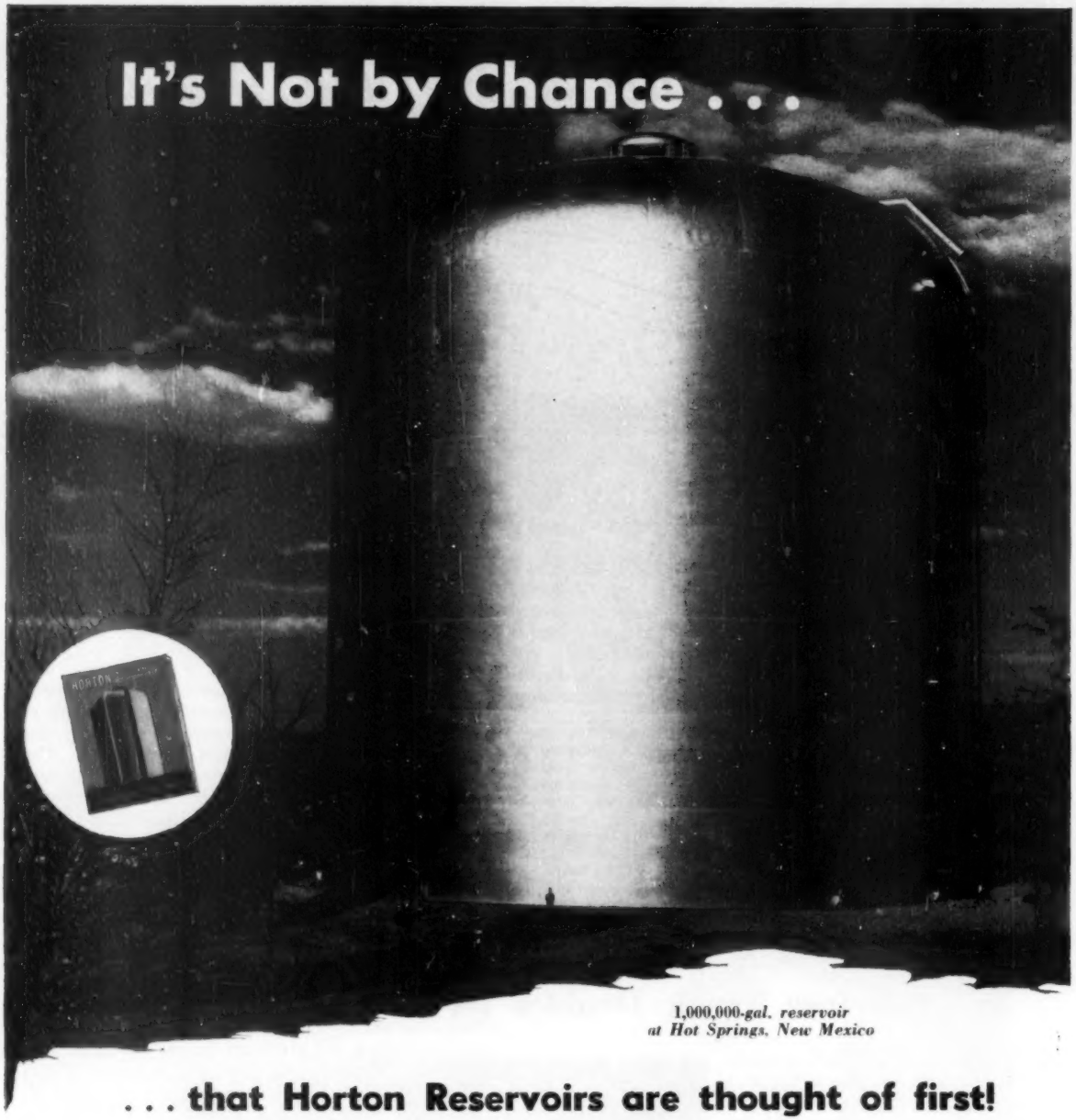
Refuse Truck Doubles for Street Repairs

BETTER STREETS as well as better refuse sanitation is a double-barreled dividend in Rankin, a city of 7,000 in southwestern Pennsylvania, since the Department of Public Works has equipped itself with covered refuse trucks.

The Pax-All truck bodies have not only enabled the borough to free two to three men per truck on refuse pick-ups, but they have also reduced collection time so that the trucks are available to serve for street maintenance work. Because of the construction and design of the truck bodies, they can handle rubble and dirt and so free dump trucks and crews for heavier work. One hydraulic cylinder is needed to perform all operations from loading the refuse to compacting and dumping.

The bodies are a product of St. Paul Hydraulic Hoist Company of Minneapolis, Minn.

Rankin's covered refuse trucks are used to cart away excess street-repair litter.



1,000,000-gal. reservoir at Hot Springs, New Mexico

. . . that Horton Reservoirs are thought of first!

This 1,000,000-gal. reservoir was built by CB&I for the city of Hot Springs, New Mexico. It's not by chance that Horton steel reservoirs like this one are thought of first to provide storage facilities where natural elevations are available. This preferred position is the result of years of experience—proper facilities—and the desire to provide you with the best possible structure your money can buy.

If planning new improvements, write our nearest office for estimates or quotations on a Horton reservoir or standpipe to improve your water system. Also, ask for our informative booklet, *Horton Steel Reservoirs and Standpipes*. There is no obligation on your part.

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Atlanta 3.....2114 Healey Bldg.	Los Angeles 17.....1503 General Petroleum Bldg.
Birmingham 1.....1502 North Fiftieth St.	New York 6.....3308—165 Broadway Bldg.
Boston 10.....1002—201 Devonshire St.	Philadelphia 3.....1616—1700 Walnut Street Bldg.
Chicago 4.....2127 McCormick Bldg.	Pittsburgh 19.....3202 Alcoa Bldg.
Cleveland 15.....2236 Midland Bldg.	Salt Lake City 4.....501 West 17th South St.
Detroit 26.....1501 Lafayette Bldg.	San Francisco 4.....1533—200 Bush St.
Havana .....402 Abreu Bldg.	Seattle 1.....1301 Henry Bldg.
Houston 2.....2101 C & I Life Bldg.	Tulsa 3.....1625 Hunt Bldg.

How an Enterprising "400" Got a Public Water Supply

THE 400 RESIDENTS of Byers, Colo., a community not yet incorporated into a town, are not ones to sit back and resign themselves to doing without. Needing a water works, the enterprising "400" of Byers provided themselves with one.

Financing Improvements

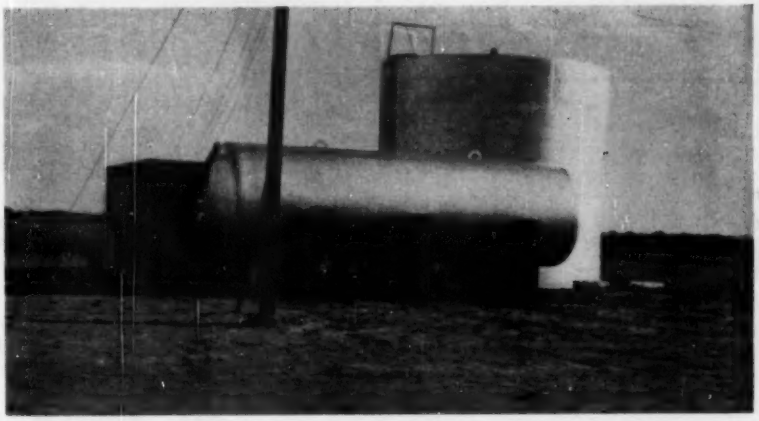
They created a Water and Sanitation District in 1952; retained the firm of Ripple & Howe, Denver consulting engineers, to design and supervise construction of the improvement; and raised $65,000 to finance the work.

The community lies in a picturesque, rugged terrain, which prohibited the use of gravity pressure. Consequently, the engineers induced pressure into the system artificially. The small normal flows in the system, balanced against possible fire demand, indicated that pumping directly into the mains would be inadvisable. The distribution system required the use of about 9,500 feet of 4-inch and 1,600 feet of 6-inch pipe with valves, hydrants, and other appurtenances.

The hydropneumatic pumping system designed by the consulting engineers operates automatically. The water is withdrawn by a 22½-hp Reda-Submergible pump from a well that is 710 feet deep. The pumping unit, a simple, inexpensive installation, is safely submerged in the well, away from fire and frost hazards. The pump delivers the water to a 50,000-gallon, steel, storage reservoir; the pumping is governed by a Healy-Ruff floatless control that operates on the water level in the tank.

Pressure Pumps

Two 15-hp Fairbanks-Morse booster pumps transfer the water to a pressure tank, 8 feet in diameter and 25 feet long. Healy-Ruff Roto-Trol controls assure the operation of the system at a pressure of 70 pounds per square inch. A drop of 10 pounds of pressure starts the pumps. The pressure tanks feeds the water to a distribution system built of Johns-Manville Transite asbestos-cement pressure pipe.



A pumphouse, a vertical reservoir, and a horizontal pressure tank are the essentials of the automatically operated water plant that affords Byers an adequate water supply.

The popularity of the system is evidenced by the use that Byers has made of the new improvement. A preliminary estimate indicated that only 70 of 106 possible services could be expected during the first year. However, after construction was begun, the enthusiasm of the people was so great that 103 connections were made. Since the rate schedule was based on the smaller number, officials look forward to paying for the improvement more rapidly and to the day when all 400 residents of Byers will be served.

Britain Looks at Fluoridation and Likes It

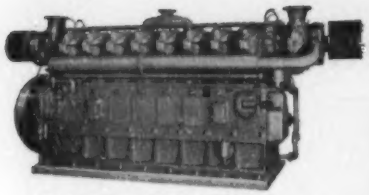
THE APPLICATION of fluorides to public water supplies as a dental health measure has found favor with British authorities. Recently, a United Kingdom Mission visited the United States and Canada to witness the results of fluoridation. According to a report by the British *Municipal Journal*, the Mission found all the results good, and none bad.

"The reported results of the studies leave no doubt," the Mission reported, "that an important reduction in the incidence of dental caries has occurred among younger children as a result of four to six years of fluoridation; that, taking into account the time factors concerned, these results are very much those which would have been predicted from epidemiological surveys; and that the dental benefits are not accompanied by any undesirable manifestations of dental fluorosis."

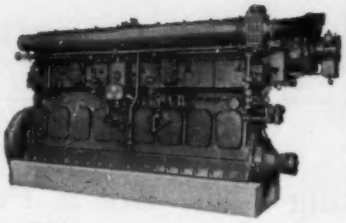
The dietary habits of people in the United Kingdom present no problem to the investigators. Although Americans drink more water and coffee than Englishmen, the latter consume more tea which is relatively rich in fluorides and compensates for the lack of fluorides that the British would ingest because of the smaller quantities of water consumed.

The Mission found no essential difference between fluoride which occurs naturally in water and that which is added to the water by the fluoridation process. They took special pains to spike rumors that the Grand Rapids fluoridation project had been accompanied by rising mortality rates. "A report that certain types of mortality in Grand Rapids has risen steeply since fluoridation began received much publicity recently. The figures were incorrect and no such rise has taken place. Indeed, mortality rates in Grand Rapids are improving."

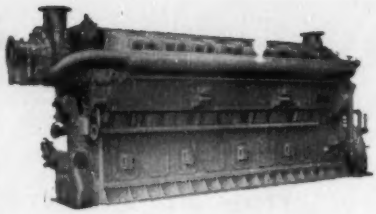
Sodium silico fluoride, the members of the Mission felt, seemed the most suitable chemical for fluoridation in Great Britain.



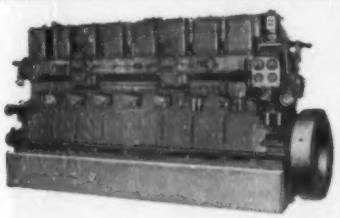
TYPE FVA.....8, 12 or 16 cyl.
Diesel — Atmospheric ..... 430 to 1150 hp.
Diesel — Supercharged .....1110 to 2230 hp.



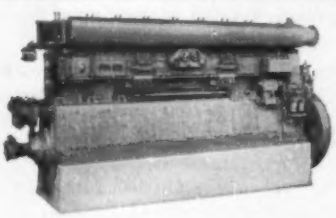
TYPE LS.....6, 7 or 8 cyl.
Atmospheric and Supercharged
Gas .....720 to 2500 hp.
Diesel .....825 to 2500 hp.
Gas-Diesel .....825 to 2500 hp.



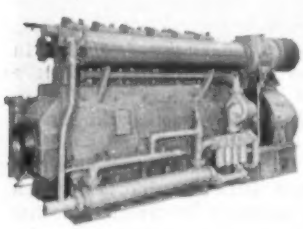
TYPE LSV .....12 or 16 cyl.
Atmospheric and Supercharged
Gas .....1440 to 5000 hp.
Diesel .....1650 to 5000 hp.
Gas-Diesel .....1650 to 5000 hp.



TYPE JS .....5, 6, 7 or 8 cyl.
Atmospheric and Supercharged
Gas .....375 to 1815 hp.
Diesel .....430 to 1815 hp.
Gas-Diesel .....430 to 1815 hp.



TYPE GS .....5, 6 or 8 cyl.
Atmospheric and Supercharged
Gas .....320 to 1480 hp.
Diesel .....300 to 1480 hp.
Gas-Diesel .....300 to 1480 hp.



TYPE FW .....6 cyl.
Diesel — Atmospheric .....245 to 500 hp.
Diesel — Supercharged .....350 to 835 hp.

it pays to meet power and compressor needs

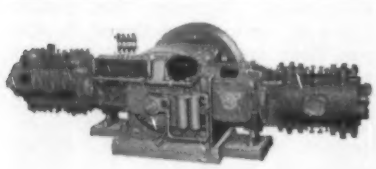
"right on the nose" . . with COOPER-BESSEMERS

• Think a moment about the importance of meeting engine or compressor needs with machines that are exactly *right* for the job. With Cooper-Bessemers you have this assurance, as evidenced by the broad range of units shown here — all standard, proved Cooper-Bessemers, engineered to give *maximum* return in any kind of service you can name, from 300 to 5,000 bhp. Note, too, the flexibility offered by each basic engine type — in number of cylinders, aspiration, horsepower range and fueling.

As important as these things are in meeting your requirements without needless waste *or* shortcomings, Cooper-Bessemers have long been known for additional plus values . . . sturdiness, long life, low maintenance and unmatched efficiencies for lower over-all cost every time! There are new bulletins, yours for the asking, to give you the latest information on Cooper-Bessemer engines or compressors just right for your needs.

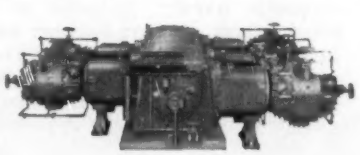
MOUNT VERNON, OHIO
COOPER-BESSEMER
GROVE CITY, PENNA.

New York Washington, D. C. Bradford, Pa. San Francisco Houston, Dallas, Greggton, Pampa and Odessa, Texas Seattle Shreveport St. Louis Los Angeles Chicago Cooper-Bessemer of Canada, Ltd., Edmonton, Alberta Tulsa Gloucester, Mass. New Orleans, La.



TYPE EM
To 350 hp.
9" stroke
Speed to 514 RPM

TYPE FM
To 1500 hp.
10½" stroke
Speed to 514 RPM



TYPE JM
500 to 3000 hp.
14" stroke
Speed to 327 RPM

Street Construction & Maintenance

One-Man Street Grading

TWENTY YEARS AGO, a crew of men would "lean on their shovels" to grade a street for new curbs and gutters. Today, one man "leans on the grader blade," and does the work more quickly and efficiently.

This modern method of grading was adopted for the new boulevard built in Milwaukee, Wis., last summer. According to John W. Tanghe, deputy commissioner of public works, the project was 2,785 feet long, 110 feet wide. It was made up of two 30-foot concrete roadways, an 18-foot center plot, and a 12-foot parkway between sidewalk and curbing.

An Allis-Chalmers motor grader, with front-wheel lean, grades a Milwaukee street.

Front-End Loaders—The Municipal Handy Men

FEW MUNICIPAL street department tools have won popularity more quickly than the tractor-mounted front-end loader. What used to be back-breaking work for a gang of unskilled men has become an easy job for a single operator skilled in the use of these loaders.

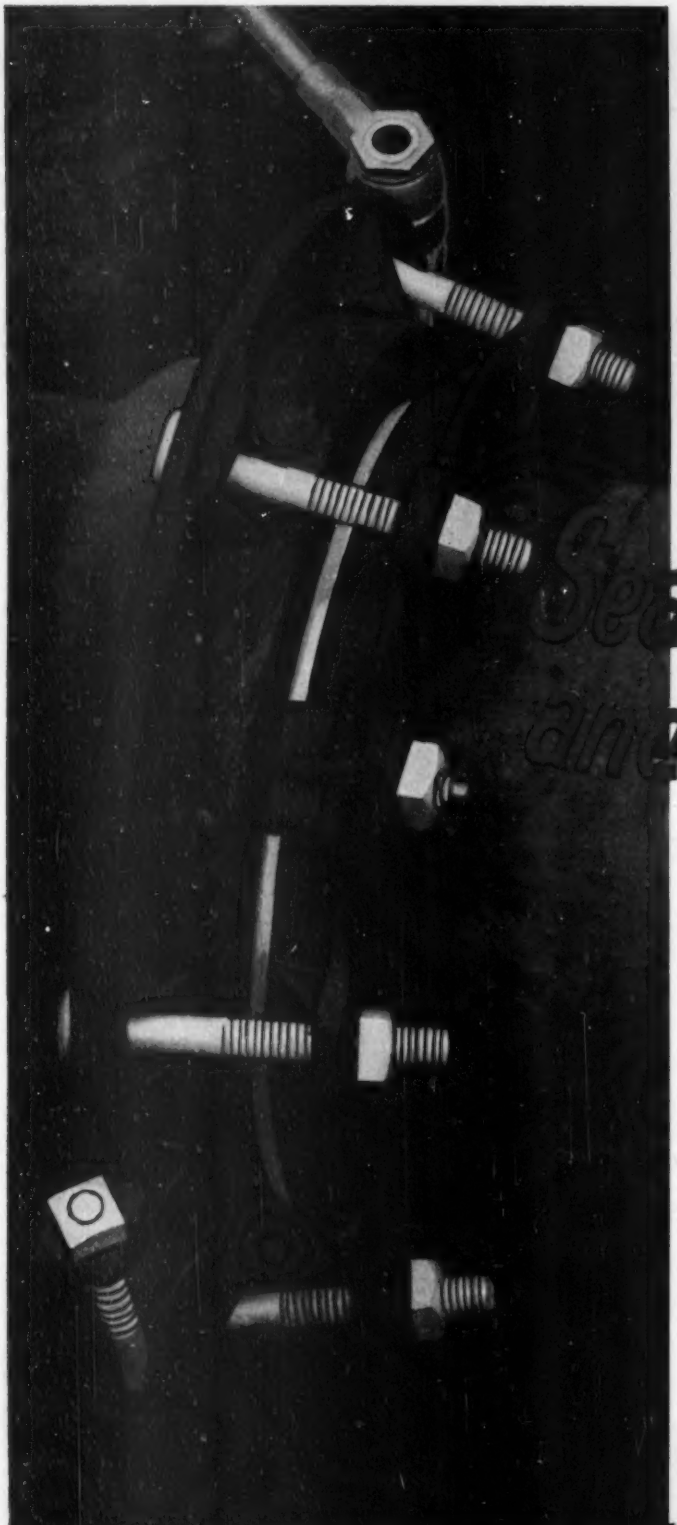
Today, the municipal street departments alone own and operate at least 4,000 of these handy units, according to a study to be reported in the 1954 issue of *The Municipal Index*, which will be published soon. In addition, nearly 600 cities are using loaders in some form or another for sanitary-fill construction. While the demand for the loaders may be tapering off somewhat in the street departments, the growth for refuse disposal should be solid and substantial for many years hence.

The loaders are mounted on either rubber-tired or crawler tractors. They have loaded everything from aggregate to street sweepings. They have performed assorted tasks varying from lowering pipe into trenches to aiding in the removal of traffic lights from poles.

The loaders fulfill the great specification so rarely met in municipal work: they have the ability to do a multitude of tasks quickly and easily and require the service of a minimum number of skilled men.

Across the country, in the northwestern municipality of Nampa, Idaho, Allis-Chalmers crawler tractors with Tractomotive front-end loaders prove their versatility by performing many services. Here two units load gravel to help in the maintenance of the city's 42 blocks of bituminous street surfacing.

In the East, at Johnstown, N. Y., a Caterpillar diesel tractor with a Trackson front-end shovel loads rock into a FWD truck for use in maintaining the city's 48 miles of streets. The truck, equipped for year-round service with a permanent snowplow mounting, can be used for many maintenance purposes.



THE CLAMP WITH THE Sealed Gasket and 3/4" Bolts!

SKINNER-SEAL Bell Joint Clamps stop bell and spigot joint leaks under pressure. Speedy one-man installation cuts repair costs.

Gasket is completely SEALED and protected; at the bell face by a Monel Metal Seal Band; at the spigot by hard, vulcanized gasket tip, acting as a plug. Equalized pressure forces gasket into every crevice in the joint, sealing the leak at its source. Sturdy malleable iron Compression and Anchor Rings—shaped and pressure-tested before shipping. Large ¾" bolts. Plated or unplated. Malleable iron bolts furnished on special request.

Prompt shipment on rated orders!

M. B. SKINNER CO.
Est. 1898
SOUTH BEND 21, INDIANA

SKINNER-SEAL BELL JOINT CLAMP

Small Expenditures Yield Big Recreation Returns for Santa Rosa's Increasing Population

MANY COMMUNITIES have a problem in common with Santa Rosa, Calif. At the present rate of population increase, the municipal pool in this city will soon be inadequate, and plans call for the construction of a new swimming pool within the next 10 years.

In such a situation there is temptation to "put up" with present conditions and forego improvements of the old pool in anticipation of the fine new one to come—eventually. But Santa Rosa's Recreation Director, Hans A. Thompson, did not succumb to this temptation, and it is interesting to see how he has met the problem of making desirable improvements and stretching facilities to serve more persons *without* increasing the annual allotment from city funds. Some of the steps taken, such as the introduction of a refreshment stand, actually brought in additional revenue.

Nothing could be undertaken that would not pay for itself out of normal operating revenue within a very few years, when the new pool is expected to become an actuality.

A primary need was for an enlarged spectator area. This was achieved, under supervision of the City Engineer's Department, by tearing down a number of lockers and establishing instead, a bag-checking system for swimmers' clothes. Swimmers change clothes in individual locker booths, then place their clothes in a "Sun Aired Bag" and check them at a central check room. Attendants estimate that with this system, half as many lockers accommodate three times as many swimmers.

New Concession Shows a Profit

In the space thus cleared, a refreshment stand was set up as well as a portable bleacher accommodating 100 spectators. The stand and its equipment cost $500; the bleacher, $500, and the construction of a 40-foot-long concrete wall, to enclose the space where the lockers had been torn down, cost another $500.

The refreshment stand netted $458 profit in its first season of operation and is expected to net considerably more now that the staff has the benefit of a season's experience in ordering supplies and streamlining operations. It paid for itself in the first season and from now on its profits will go directly into pool-operating funds, reducing by about 20% the costs that would otherwise be borne by the city.

Refreshment Stand Operation

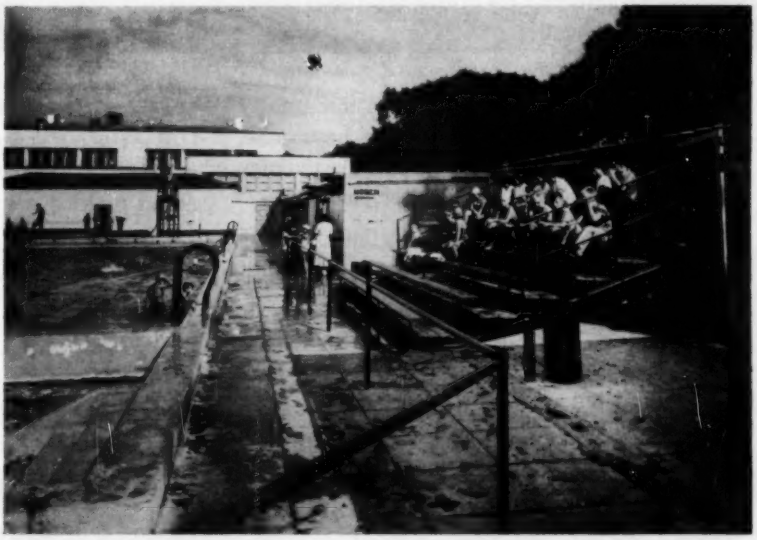
The operation of the stand is, of course, under the direction of the Recreation Department, and parents are thereby assured that sanitary conditions and quality of refreshments meet the highest standards. The stand serves a noncarbonated orange drink, "Sno-cones" (shaved ice flavored with fruit syrup and served in a cone-shaped paper cup), hot dogs, candy bars, popcorn, and coffee. It also carries swimming caps, ear stoppers and nose clips, sold at regular retail prices.

All drinks are served in paper cups as a health measure and to guard against the danger of broken glass on the premises. (Incidentally, bottles of sun-tan lotion are also excluded from the pool's environs for this season.) Paper cups also help to cut operating costs by eliminating labor expense for dish washing.

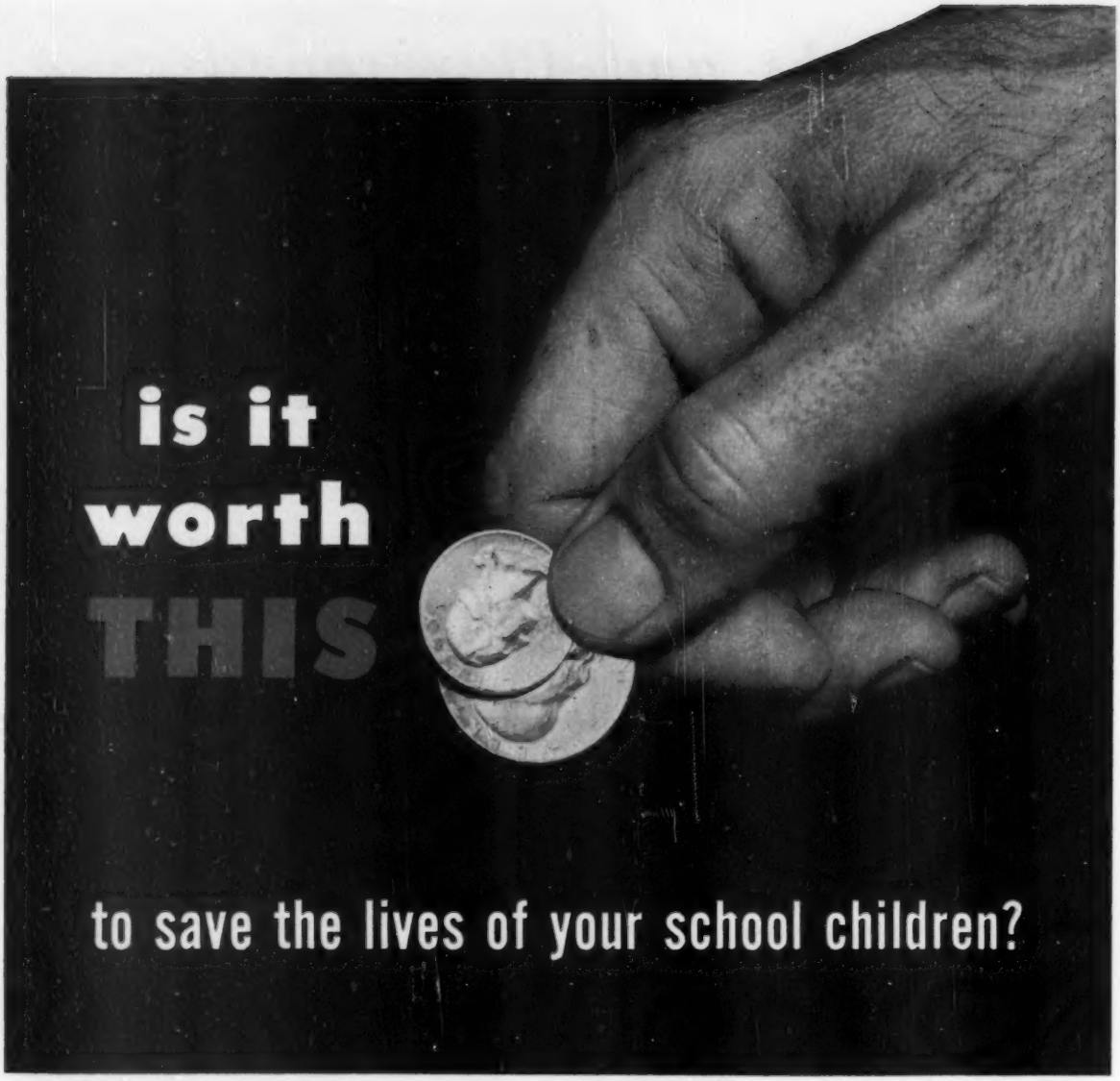
Portable Steel Bleacher

The portable steel bleacher manufactured by Beatty Safeway Scaffold, Inc., of San Francisco, was erected primarily for the comfort of mothers who bring children to swimming classes, but it is expected that it will prove a source of revenue by providing spectator accommodations for water shows and swim meets.

Because of its portability, the bleacher represents a long-term investment that will become part of the new pool's facilities. The bleacher was first set up on the opposite side of the pool, awaiting completion of the spectator area, and the original cost included installation. It was then dismantled and erected in its present location by two members of the pool's maintenance staff in four hours' time.



Beatty portable steel bleachers at Santa Rosa's Municipal Swimming Pool seat 100 spectators comfortably. They are appreciated by parents who bring children to swimming classes and also serve to attract paying spectators to aquatic events. The bleachers, which are portable, can be dismantled and re-erected by two men in half a day.



Many people don't realize that a community of less than 50,000 people can have safe, sure fire alarm protection for an average annual cost of 75¢ per box per person.

And that cost includes installation of the system, as well as maintenance throughout the years.

Schools — yes, and hospitals, hotels, institutions cannot go unprotected without endangering hundreds of human lives.

For the full story of safe, sure alarms with a Municipal Fire Alarm System, consult us about making a survey.

There is no substitute for the Municipal Fire Alarm System

THE GAMEWELL COMPANY
NEWTON UPPER FALLS 64, MASS.
In Canada: Northern Electric Co., Ltd., Belleville, Ont.

Public Safety

More Fire Station Designs Available

CITY OFFICIALS throughout the country should note that the fourth brochure on "Fire Station Design" may now be obtained from The Circul-Air Corp., 575 E. Milwaukee Ave., Detroit 2, Mich. It will be sent without charge, as were 11,000 copies of the three earlier volumes. The company has become almost as favorably known for this distinctive service to municipalities and their fire departments as for its widely used air-conditioning fire-hose dryer.

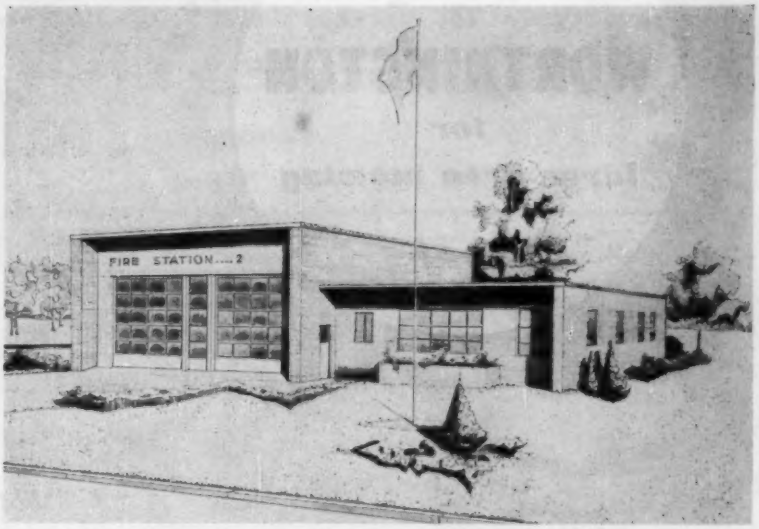
Plans of Stations Included

The new 60-page brochure presents plans and architects' drawings of about 70 of the newest and best fire stations in the United States and Canada, with descriptive text. Included are plans of stations in Cleveland, Toledo, Los Angeles, Detroit, Memphis, Seattle, Milwaukee, Boston, Raleigh, Charleston, Kalamazoo, Monroe (La.), Atlanta, Wichita, Topeka, Austin, and scores of smaller cities and suburban communities on Long Island, in California, Florida, Illinois, and in many metropolitan areas. A common denominator in all these modern designs, suitable for the finest areas of cities, is the absence of a hose-drying tower.

Other improvements are apparent, too, in lighting, heating, air-conditioning, sometimes sound-conditioning—yes, even in cooking facilities. TV sets are standard equipment in most areas where reception is possible. Use of colored tile, plastics, glass, stainless steel, monel metal, and other decorative but highly functional basic materials is commonplace rather than unusual in the new planning. Modern furniture, lockers, lounges, and study rooms are found in most new houses.

Speeders Beware

CHICAGO is adding 18 new Harley-Davidson 3-wheel Servi-Cars to its fleet of 235 motorcycles. The Chicago Park District Police Department has ordered 15 new Servi-Cars for park and boulevard patrol. Wichita is ordering 23 motorcycles with 2-way radio for traffic patrol; Baltimore, 25 for its squadron of 98 cycles; St. Louis, 15 two-wheel cycles equipped with 2-way radio for its fleet of 80 Harley-Davidsons.



Livonia, Mich., is in the process of completing the $69,000 fire station shown here. The building is 70 feet in length and 67 feet in width. The apparatus room will accommodate two 1,000-gallon pumping engines and an emergency panel truck which will carry two resuscitators as well as other rescue equipment. Fire Chief Calvin L. Roberts reports that the new fire station and its vehicles will be radio-controlled.

New Building for Gainesville, Fla., Police

A NEW municipal police station in Gainesville, Fla., contains offices for all police personnel, a record division, storage for stolen property, detention cells for 20 prisoners, and a municipal court room. The building cost $77,800, exclusive of architect's fees and site.

Prior to its erection, the police department was housed in the basement of the City Hall. The municipal court was held in a room in the basement of the City Hall. Also, Gainesville, now a city, had no jail, and all prisoners had been accommodated in the Alachua County jail at a very high cost to the city. The new building is a long step in the improvement of the city's facilities.

R. T. CUNNINGHAM
City Manager
Gainesville, Fla.

New police station designed by Goin and Moore, of Gainesville, Fla.

WORTHINGTON

for

large area mowing

For golf courses, parkways, airports, parks . . . wherever large area mowing is a problem . . . the fast, efficient Worthington Model "F" Chief Tractor and Gang Mower combination is the answer.

Here's why—cutting units are out in front, completely *eliminating streaks and wheelmarks*, and the grass is mowed before the wheels flatten it. This design enables drivers to save time by gauging clearances better, trimming closer, and reducing overlap.

For proof of superior performance, *see the Model "F" in action!* Ask your Worthington dealer for a demonstration—or *get complete facts* by writing for Bulletin W-109.

compare these features...

20% More Power—New Ford "Red Tiger" engine makes hill climbing and tough-job mowing easy.

High Maneuverability—Made possible by front-wheel drive and rear-wheel steering.

Speedy, Between-Job Travel—Hydro-Travel Control lets mowers gain transportation time.

Fairway or Blitzer Mowers—Available in three, five, or seven-gang combinations. Easily converted.

Greater Driver Comfort—New adjustable steering column and super-comfort, E-Z ride seat reduces operator fatigue.

WORTHINGTON MOWER COMPANY
STROUDSBURG, PENNSYLVANIA

WORTHINGTON MODEL "F" TRACTOR AND GANG MOWER COMBINATION

Get What You Want—No Charge!

Please check the list of interesting free catalogs on this and following pages. To obtain the literature you want, write directly to the manufacturers at the addresses given. If you prefer, you may circle the identifying number on this coupon and mail to THE AMERICAN CITY, 470 Fourth Ave., New York 16, N. Y., and we will see that catalogs are sent to you without expense or obligation. 2/54

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Name .....**Position** .....

Address .....

Surveying Easier with Optical Squares

1 What are Optical Squares and how are they used? These small surveying instruments that do a complete job of laying out and checking buildings, concrete forms, ditches, and pole lines, are fully described in *Booklet AC 2*. The "watch pocket" transits contain single or double pentagonal prisms. They don't require field adjustment, and may be operated without practice. Write HENRY WILD SURVEYING INSTRUMENTS SUPPLY CO. of AMERICA, INC., MAIN and COVERT STS., PORT WASHINGTON, N. Y.

Parking Meter Fines Collected Easily

2 This company has devised a simple, courteous and effective method of assessing, collecting and accounting for parking meter fines. Called the Traf-O-Teria System, it assures the voluntary, prompt payment of a higher percentage of fines; saves on clerical, police and court time; and establishes good will for city officials. How the system operates is fully explained in literature available from the TRAF-O-TERIA SYSTEM, EL DORADO, KANS.

"Spring Cleaning" Is Easy In Cedar Rapids, Iowa

3 The street department of Cedar Rapids, Iowa, which once employed 12 men with hand shovels to keep four trucks loaded with debris and refuse during spring cleanup, now uses one man on a Shoveloader to do the job. The Shoveloader, officials report, loads quickly and efficiently, saving the city about $150 per day. In summer, it picks up and loads sweeper piles; in autumn, it picks up leaves; and in winter, the unit may be used for snow removal. THE BAKER-LULL CORP., 358 W. 90th ST., MINNEAPOLIS 20, MINN., will send literature.

Furnishes Low-Cost Street Marking

4 The Model 8T Reflecto-Liner, a machine that will lay plain or reflective marking material quickly, provides a sharp line definition to within 1 inch of the curb. This line may be drawn from 2 to 6 inches wide, and is clean-cut and uniform. The machine is simple to clean, and provides better balance and easier steering than most. For a detailed description of the Model 8T Reflecto-Liner, address WALD INDUSTRIES, INC., HUNTINGDON, PA.

Self-Service Parking

5 Using these new coin-operated parking-lot gates, your city can handle its off-street parking problem without benefit of attendants or additional policemen. The gates are both easy to install and simple to service. They rise when a coin is inserted, lower after the rear wheels have cleared the treadle. Write EM-RO DISTRIBUTORS, 120 S. LaSALLE ST., CHICAGO 3, ILL.

New Light-Hauling Vehicle

6 CUSHMAN MOTOR WORKS, INC., 950 N. 21st ST., LINCOLN, NEB., offers the 780 Shaft Drive Truckster, a new light-hauling vehicle that will handle payloads up to 500 pounds. The unit combines extra power with an automotive-type transmission and clutch. The box features a capacity of almost 10 cubic feet, with tailgate and stake holes for sideboards mounted on a welded-steel body. Write for literature.

Safety Vault Covers

7 Valve, meter, transformer and district governor vaults need safety covers that can be raised and lowered quickly, easily and in safety. THE E. H. WACHS CO., 1525 N. DAYTON ST., CHICAGO 22, ILL., makes such covers with tamper-proof locks opened only by key. These covers stand upright when the manhole is open. The heavy cast-iron frame and ribbed-steel cover is immune to heavy traffic.

Automatic Car Spacing For City Parking Lots

8 Municipal parking lots using Har-Bar Barriers find that they are high enough to stop a car, yet sufficiently low to clear bumper guards. Designed by HARRIS-BARRIER, INC., 5407 PENNSYLVANIA ST., INDIANAPOLIS 5, IND., these barriers provide automatic car spacing on black top, cement, macadam, gravel or cinder surfaces. Write for literature.

Trucks That Facilitate Snow Removal

9 Effective snow removal, reports OSHKOSH MOTOR TRUCK INC., is dependent on heavy-duty trucks that will stand up under hard work. The company builds these trucks with 4- and 6-wheel drive, and an automatic self-locking differential in the transfer case. They operate winter and summer, removing snow, maintaining streets and roads, and hauling on-and-off the highway. For full information, address the manufacturer at OSHKOSH, WIS.

Make Your Own Signs

10 Parks, city hospitals and other municipal departments can make their own directional signs, markers and labels with a portable machine the size of a typewriter. Operated by an unskilled worker, the unit engraves on plastics, wood and metals, producing a permanent, attractive sign at less cost. Write the NEW HERMES ENGRAVING MACHINE CORP., 13-19 UNIVERSITY PL., NEW YORK 3, N. Y.

Electric Hand Dryer

11 This unit provides a quick, automatic hand-drying service 24 hours a day. The Sani-Dri has a small, oval nozzle designed to produce a more concentrated stream of air. Instant starting is assured by a push-button switch with automatic shut-off. THE CHICAGO HARDWARE FOUNDRY CO., 51123 COMMONWEALTH AVE., NORTH CHICAGO, ILL., will send complete information.

Spend Less for Refuse Collection

12 Money ordinarily spent for refuse collection is saved when sanitation officials urge the community-wide installation of food-waste disposers. The Youngstown Kitchens disposer is simple to operate, shredding food waste into minute particles and flushing it down the drain, through the sewer. A description of the unit, with full information on costs and installation, is available from the MULLINS MFG. CORP., WARREN, OHIO.

New Ambulance Cot

13 Recommended for fire and police department use is this multi-level ambulance cot which permits easy delivery or removal of the patient from the stretcher to the hospital bed. Handy-Grip lifting bars enable attendants to balance the load while placing the patient in the ambulance. Lightweight, the cot is made of 99% aluminum. Write DEPT. M, BOMGARDNER MFG. CO., 1384 HIRD AVE., CLEVELAND 7, OHIO.

Assures Faster Leaf Pick-up

14 Among the advantages attributed to this mechanized leaf loader are fast, low-cost operation, resulting in cleaner streets, parks and recreation areas. The unit will pick up papers, bottles and other refuse as well. A full description of the American Vacuum Leaf Loader is available on request from LEAF LOADER DIV., AMERICAN STRUCTURAL STEEL and TANK CO., 21050 W. 8-MILE RD., DETROIT 19, MICH.

(Please turn to page 31 for more Bulletins)

Newark, Ohio is no different from your city. You want the best pipe you can get for your water supply. So does Newark.

You want a line that meets every one of the "Big 3" requirements for an ideal water supply line: *long life, great strength* and *sustained high carrying capacity.* So does Newark.

That's why Newark picked Price Prestressed Pipe for its 16, 20 and 24 inch transmission and distribution lines . . . because Price Pipe gave them *all 3* of the "Big 3."

Miami, Louisville and Cleveland picked Price Pipe too . . . they wanted long life and protection from blow-ups, tuberculation and corrosion.

If *you* want this protection, put Price Concrete Pressure Pipe in your specifications.

Price Brothers Company

1801 East Monument Ave. • Dayton 1, Ohio

Concrete Pressure Pipe for Water Supply, Subaqueous, Pressure Sewer and Culvert Installations

Which Catalogs Interest You?

Write directly to the manufacturers or use the coupon on page 29

New Fire-Fighting Unit

15 Designed by SHARPSVILLE STEEL FABRICATORS, INC., SHARPSVILLE, PA., the Challenger carries over 600 gallons of water and is capable of delivering more than 600 pounds of pressure. Ideal for the rural community, the new fire-fighting unit will check any blaze with a minimum of fire and water loss. Write for literature.

Hypochlorites

16 A safe, easy-to-use source of chlorine for regular water treatment is HTH Granular, a dry calcium hypochlorite containing 70% available chlorine. HTH may also be used in the sterilization of new mains, for algae control, and finally, it will provide adequate chlorination in cases of emergency. Available in 100-pound drums and cases of nine 5-pound cans, HTH is manufactured by the MATHIESON CHEMICAL CORPORATION, MATHIESON INDUSTRIAL CHEMICALS DIV., BALTIMORE 3, MD.

A Convertible Snow Thrower in Spring

17 While you could have bought this 7.5-hp Snow Thrower last summer and used it for mowing, rolling, grading or hauling, now is as good a time as any to operate the unit, says THE MAXIM SILENCER CO., 84 HOMESTEAD AVE., HARTFORD 1, CONN. In winter the Maxim Snow Thrower removes snow quickly and efficiently. In spring, it is easily converted for a variety of municipal jobs. Write for details.

Accounting Made Easier

18 Many municipalities are using these accounting machines for the billing of water, lighting and power; for appropriations, including total expenditure, unencumbered balances, total of encumbrances, and balance of cash available; and for their operating expense and material supply records. For full information on Sundstrand machines, write the UNDERWOOD CORP., ONE PARK AVE., NEW YORK 16, N. Y.

Easy-to-Read Street-Name Signs

19 Third-dimensional letters that are either embossed or carved-in metal are a standard part of these street-name signs. The contrasting baked-on enamel finish makes the sign easier to read. A catalog on Lyle street-name signs will be sent on request by LYLE SIGNS, INC., 2722 UNIVERSITY AVE., S.E., MINNEAPOLIS 14, MINN.

Ample Protection for Public Property

20 A variety of products designed to protect public property in your community is reported by THE STEWART IRON WORKS CO., INC., 2021 STEWART BLOCK, CINCINNATI 1, OHIO. Among these are chain-link wire and iron-picket fence, wire-mesh partitions, and wire window guards. Also steel folding gates and an assortment of metal specialties.

Garbage Grinders Cut Collection Costs

21 When municipal officials advise the use of sanitary garbage disposers, they are not only benefiting the housewife, but are cutting the community's garbage collection costs as well. Other advantages in a garbage grinder system include: the elimination of garbage cans and accompanying odors; fly and rat pest reduction; and an increase in digester gas for use and sale and in digested sludge for fertilizer. An effective grinder is the Hotpoint Disposall. Get full data from the HOTPOINT CO., HOTPOINT DISPOSALL DEPT., 5600 W. TAYLOR ST., CHICAGO 44, ILL.

Steel Street-Lighting Poles

22 Aside from its attractive appearance, a steel street-lighting pole that is molded along slim, graceful lines won't act as a visual obstruction, creating traffic hazards. The tubular steel poles made by this company are strong as well as slim. The only attention they require is an occasional coat of paint. Address NATIONAL TUBE DIV., UNITED STATES STEEL CORP., PITTSBURGH, PA.

Installs Water and Sewer Pipe In Any Weather

23 Cold weather, says this company, is no reason to stop outside installations of water and sewer pipe. Especially when there are pipe pushers available that will work under the frost line, despite the season. These pipe pushers are said to save up to 80% on trenching costs. They are designed without gears, racks, pinions or jack screws, to install pipe up to 15 inches in diameter, in lengths to 200 feet. Request literature from the GIANT MFG. CO., COUNCIL BLUFFS, IOWA.

Restore Worn Traffic Signs

24 Don't discard worn traffic signs, advises this manufacturer. The GRACE SIGN & MFG. CO. has devised a serviceable reflective sign face that can be applied over your present sign in minutes. Made of 30-gauge steel, it comes in two shapes—diamond and octagon—in 24- and 30-inch sizes. Address the company at 3600 S. SECOND ST., ST. LOUIS 18, MO.

Police and Fire Department Uniforms

25 METCALF BROS. & CO., INC., 45 E. 17th ST., NEW YORK, N. Y., manufactures standard uniform fabrics for police and fire departments. Available are standard serges from 12 to 20 ounces, standard tropicals for shirts, and serviceable overcoat fabrics. All are guaranteed for uniformity in color and service.

Striping Compound for Marking City Streets

26 A pavement marking compound that dries in 15 minutes, and is simple to apply with standard equipment is offered by the MINNESOTA MINING & MFG CO., ST. PAUL 6, MINN. Premixed Beeline will stand up under heavy traffic. Inexpensive, it eliminates smeared center lines and reduces traffic interruption.

New Street-Lighting Standard

27 *Bulletin OTA* describes the "Elite" Octa-Tube street-lighting standard, giving complete specifications, styles and features. These units offer effective thoroughfare lighting for any-size community. Sixty-three of them are now in use in Moorhead, Minn., with many other cities following suit. Write MILLERBERND MFG. CO., WINSTED, MINN.

A Leak-Proof Water Pipe

28 A tight, leak-proof pipe that is sufficiently flexible to permit settlement, or expansion and contraction of the pipeline, is Boltite. This mechanical-joint pipe is layed quickly by untrained workmen using a ratchet wrench. It is ideal for water and gas lines, and incorporates parts that are easily interchanged with pipe fittings, valves and hydrants of different make. For complete information, write either the McWANE CAST IRON PIPE CO., BIRMINGHAM, ALA., or the PACIFIC STATES CAST IRON PIPE CO., PROVO, UTAH.

Simplified Sewer Maintenance

29 The City of Eastlake, Ohio, maintains its sewers with a new sewer and drain cleaning machine designed by KOLLMANN MFG. CO., 4818 PEACH ST., ERIE, PA. The unit bores into and loosens sewer obstructions, which are then flushed out with a fire hose. Equipped with an instant-acting clutch, it is able to spin cable at a speed of 700 revolutions per minute, and operates effectively at distances reaching 350 feet. Four other Ohio communities: Mentor Village, Painesville, Willowick and Wickliffe, have also adopted the cleaner.

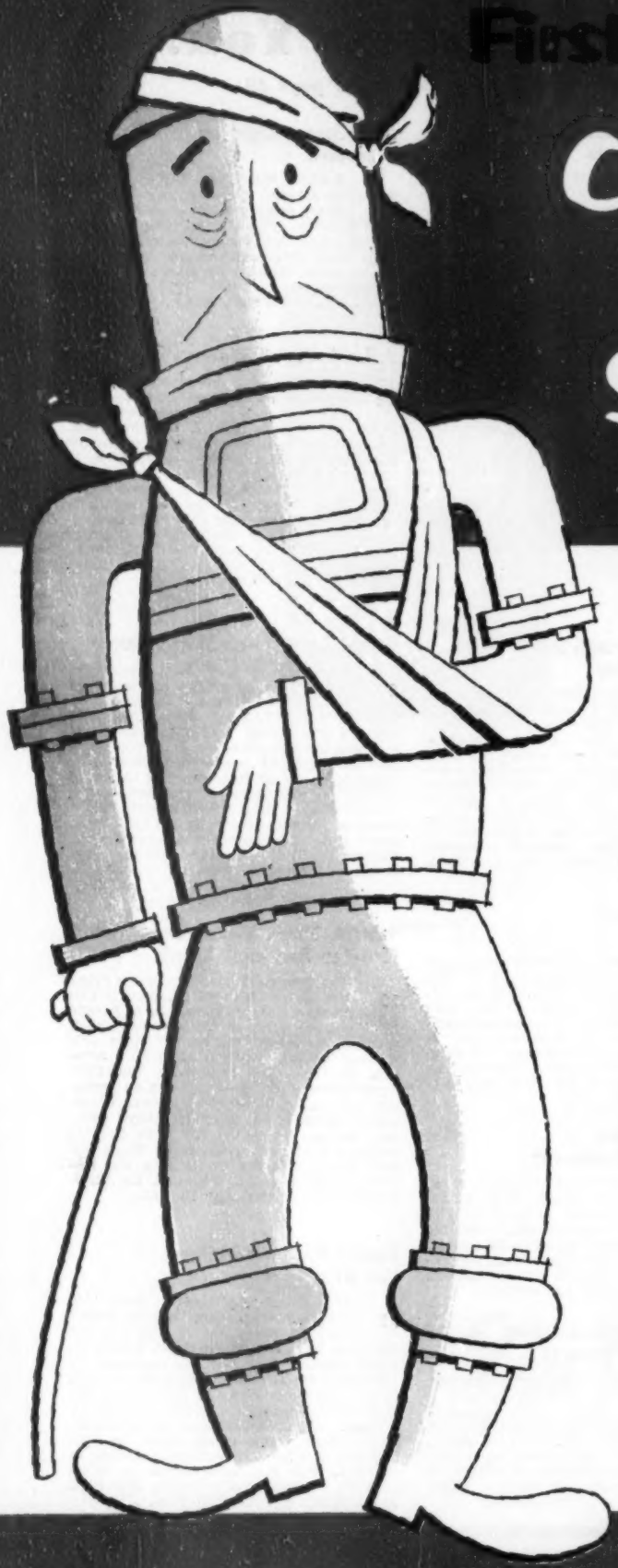
Sewage Plant Handles Heavier Seasonal Loads

30 The sewage treatment plant serving the sister cities of St. Joseph and Benton Harbor, Mich., has to handle an increased load of 70% during peak summer vacation months. It does this without adding aeration basins or aeration facilities, by employing the PFT Kraus method of piping and sludge pumping, and by making effective use of digester liquor in the main treatment process. Sewage officials, faced with heavier seasonal loads, can learn more about the PFT Kraus Process by writing the PACIFIC FLUSH TANK CO., 4241 RAVENSWOOD AVE., CHICAGO 13, ILL.

Faulty Parking Meters Cut Revenues

31 It's simple arithmetic, says this manufacturer. One "out of order" parking meter means one less car that can be accommodated. It means reduced parking revenues and increased repair costs. Dependable parking meters such as the manually operated Mi-Co and the Mi-Co Twin Automatic, rarely require attention. When adjustments are required, they're made right at the meter location and the unit is back serving motorists in minutes. For full information on Mi-Co parking meters, write MI-CO METERS, 231 COURT ST., COVINGTON, KY.

(Please turn to page 33 for more Bulletins)



First Aid for CRIPPLED WATER SYSTEMS

■ Are your water pumps past their prime? Wells showing signs of internal disorders? Better call in Layne for a checkup. Layne water supply specialists can get crippled water systems off their crutches in a hurry.

Emergency Repairs—Layne has the equipment, repair parts and skill to make emergency repairs in minimum time. Field crews are qualified to pull and repair all makes of vertical turbine pumps.

Water Well Acidizing—This often adds years to the life of failing water wells. It may be the answer to your water supply problem.

Layne repair and maintenance service, backed by 72 years of experience, keeps water supplies up and costs down. Get complete details now from your nearest Layne Associate Company. Or write Layne & Bowler, Inc., Memphis 8, Tenn.

Water Wells
Vertical Turbine Pumps

WATER TREATMENT

Layne Associate Companies Throughout The World

Obtain this Literature Free of Charge!

Write directly to the manufacturers or use the coupon on page 29

Refuse Truck is Easy to Load, Pack and Dump

32 Most frequently referred to, when sanitation officials discuss the Pak-Mor refuse collection truck, is this heavy-duty packer plate which facilitates loading, packing and dumping. The plate carries the refuse from the front to the rear of the cylindrical truck body, then compresses it under 18,000 pounds of pressure. This same plate also provides automatic discharge of refuse. A colorful, new brochure describes the Pak-Mor in greater detail. Write PAK-MOR MFG. CO., P. O. BOX 6147, SAN ANTONIO, TEXAS.

Let the Sunset Turn on the Lights

33 Airplane warning lights on water tanks and smoke stacks, floodlights for plant grounds, street lights in areas not under direct switchboard control, all can be turned on at dusk at the exact time needed. A Weston Plug-in Illumination Controller is all that is required. Literature on the various models are available from WESTON ELECTRICAL INSTRUMENT CORP., NEWARK 5, N. J.

Greater Capacity for Water Mains

34 Chester, Pa., installed some 233,000 feet of 24-, 30-, 36-, 42- and 48-inch Lock Joint Prestressed Concrete Cylinder Pipe in its water transmission main, and found a coefficient of 150, meaning greater capacity and less waste. This pipe may be obtained in inside diameters of 16 inches and larger, and is discussed in literature from LOCK JOINT PIPE CO., P. O. BOX 269, EAST ORANGE, N. J.

Magnetic Sweeper Assures Metal-Free Streets

35 Alinco permanent magnets have been incorporated into this new road sweeper, enabling it to pick up nails, wire and ferrous metal pieces. The unit works on city streets, roads, loading areas and airport runways. It operates without an electric-power source, and is easily attached to any towing vehicle. For facts on Homer's new magnetic road sweeper, write THE HOMER MFG. CO., INC., DEPT. 250, LIMA, OHIO.

New Diesel, Gas and Gasoline Engines

36 Recent additions to the International Harvester line of engines are these seven new 6-cylinder, carbureted, valve-in-head units. The line now includes 18 models—diesel, gasoline or gas—ranging from 16.5 to 200 net hp, and noted for their flexible, low-cost operation. Full engine data are available from the INTERNATIONAL HARVESTER CO., CHICAGO 1, ILL.

A Good Outdoor Drinking Fountain

37 THE MURDOCK MFG. & SUP. CO., CINCINNATI 2, OHIO, advances these reasons for using the company's outdoor drinking fountains: they won't freeze in cold weather, water waste is avoided, and each unit is sturdily constructed of brass and bronze, assuring virtually trouble-free operation. This firm also makes hydrants and street washers. Catalog on request.

Low-Pressure Fittings for Water and Sewage Lines

38 A new low-pressure joint, Type LPR, has been added to the Emsco line of ball-bearing swivel fittings. Of special interest to water and sewage officials, the fitting is designed for a maximum pressure of 1,000 psi, at a maximum temperature of 225° F. Other fittings offered by the company are available for pressures up to 15,000 psi, and temperatures to 750° F. Request catalog from DEPT. 39, EMSCO MFG. CO., P. O. BOX 2098 TERMINAL ANNEX, LOS ANGELES 54, CALIF.

"Salt Away" Ice and Snow

39 This fast, inexpensive method of ice and snow control for city streets involves the application of de-icing salts, rather than sand or cinders. It features the use of a Scotchman spreader, manufactured by TARRANT MFG. CO., EAST AVE., SARATOGA SPRINGS, N. Y. Write for details.

One- and Two-Car Parking Meters

40 Four dependable parking meters, the Twin-O-Matic (2-car meter), Unimatic, Huskey, and Superior are available from THE KARPARK CORP., CINCINNATI 6, OHIO. They are equipped with accurate timing mechanisms, assuring precision operation and increased parking meter revenues. Write for literature.

New Front-Mounted Fire Pump

41 A single-stage, front-mounted centrifugal fire pump, featuring a single plate, dry, automotive-type clutch that can be engaged or disengaged at any speed, is offered by the WATEROUS CO., ST. PAUL, MINN. The new 500 gpm Class A unit, Model CF-3, remains in or out of gear until changed. The operating lever may be located on either side of the pump for convenience. Write for literature.

A Low-Cost, Sanitary Sewage Ejector System

42 Instead of cleaning screens and pumps, sewage officials can save time and cut costs by using a pneumatic sewage ejector at sewage booster stations and treatment plants. Sewage flows into an iron or steel chamber. When the chamber is filled, the ejector admits compressed air above the sewage, forcing it out through the discharge line. This sanitary system requires little attendance; less maintenance. Write The BLACKBURN-SMITH MFG. CO., 150 OBSERVER HIGHWAY, HOBOKEN, N. J.

Choosing a Gas Holder

43 An old-fashioned sewage digester gas holder usually presents enough exterior mechanisms to make it a "sore thumb" in any neighborhood. The Wiggins Gas Holder with dry fabric seal and self-aligning piston, eliminates these unsightly mechanisms. A boon to better community relations, these modern structures offer safe, efficient, and low-cost construction and operation. Address GENERAL AMERICAN TRANSPORTATION CORP., 135 S. LaSALLE ST., CHICAGO 90, ILL.

Make Your Trucks Self-Loading

44 A truck that loads itself is not as improbable as it sounds. Any 2-ton truck, in fact, can perform this feat with the aid of an operator, and the multi-purpose LoDaL. For a full description of this new hydraulic truck self-loader, which may also be used for street sweeping, snow removal and refuse collection, address LoDaL INC., BOX 1052, NORWAY, MICH.

A Self-Closing Waste Receptacle

45 Self-closing waste receptacles that don't require weights, springs or hinges, are rarely in need of repair. The Solar receptacle is designed without moving parts. Its heavily reinforced top and body, and sturdy metal legs resist rust and corrosion. Additional data are available from the SOLAR-STURGES MFG. DIV., PRESSED STEEL CAR CO., INC., MELROSE PARK, ILL.

Simplifies Brush Disposal

46 One of the easiest ways for a park official to dispose of brush is to use the portable M & M brush grinder. Only one man is needed to operate this unit. He feeds brush and branches directly into the grinder where they are "chewed" into wood chips, then automatically blown into a waiting truck or spread on the ground. In this way, seven truckloads of brush are quickly converted into one truckload of chips. An illustrated folder will be sent by MITTS & MERRILL, 1003 S. WATER ST., SAGINAW, MICH.

Street Flusher Also Fights Fire

47 A street tractor-flusher that may be used to combat fires is offered by the STANDARD STEEL WORKS, NORTH KANSAS CITY, MO. Powered by the tractor take-off or an independent pump motor, the TF tractor-flusher gives 50 pounds' pressure on each nozzle. A catalog on the company's complete flusher line is available on request.

Heats Bitumens for Street Repair

48 Street department officials who are interested in a safe method for heating cut-back and highly inflammable street-repair material, are offered facts about White heating kettles. Kettles made by this company are equipped with fireproof tops. They are available plain, or with hand- or engine-driven spray pumps, in 65, 110, 165, 220 and 300-gallon capacities. For literature, write WHITE MFG. CO., ELKHART 1, IND.

Diesels Furnish Dependable Power

49 Both Atlas and Superior diesel engines are capable of providing the necessary power to operate water supply, sewage disposal, and municipal power plants in any size community. Manufactured by ENGINE DIV., THE NATIONAL SUPPLY CO., SPRINGFIELD, OHIO, these units are designed with dependable, low-cost operating features, for efficient over-all performance.

(Please turn to page 34 for more Bulletins)

Announcing the

Carson Pirie Scott & Co.

CENTENNIAL COMPETITION

in City Planning

To provide a plan which will serve as an inspiration for the redevelopment and improvement of Chicago's Central Commercial District.

First Prize $20,000
Second Prize $7,500
Third Prize $2,500
Five Prizes, ea. $500
Total Awards $32,500

Sponsored by Carson Pirie Scott & Co., Chicago, Illinois.

Approved by the Committee on Competitions of The American Institute of Architects, the Western Society of Engineers, and the National Executive Committee of the American Institute of Planners.

Considered by the Chicago Plan Commission to be a major contribution to planning in Chicago.

Professional Advisor, Howard L. Cheney, of Chicago, Illinois, Fellow of The American Institute of Architects.

Competition closes 5 P.M. Thursday, July 15, 1954.

The objective of this competition is to produce a redevelopment plan that will achieve:

(1) Increased efficiency in the functions of the Central Commercial District as the vital focal point of trade in the greater Chicago region.

(2) A high degree of convenience to the public in terms of the people working here, shopping here and engaging in regional commerce.

(3) Architectural, planning, and engineering cohesion, and the enhancement of the cultural and aesthetic aspects of the district.

The competition is open to architects, city planners, engineers, persons engaged in allied professions, and college students of these professions, who are residents of the continental United States.

Winning entries will be decided by a jury of awards consisting of recognized architects, city planners and engineers of established reputation, whose names will be announced after the jury has met and selected winning solutions.

Information given here is to be considered an announcement only. Mandatory requirements and detailed information are fully covered in a program which will be ready for mailing February 15, 1954. Your copy will be mailed promptly upon request to:

Centennial Office

100 Years Carson Pirie Scott & Co. preparing for Tomorrow

1 South State Street
Chicago 3, Illinois

More Literature

Write directly to the manufacturers or use coupon on page 29

Salt vs. Abrasives for Winter Traffic

50 Use any mechanical spreader to distribute this rock salt on iced or snow-filled streets. The salt will convert snow into slush; break up ice crust and loosen it from the pavement, permitting easy clean up by plow or traffic. According to the INTERNATIONAL SALT CO., INC., SCRANTON, PA., one truckload of Sterling auger-action rock salt will cover up to 15 miles per load, doing a faster, more economical job than abrasives. Write for literature.

Offense-Free Incinerators

51 Economical refuse disposal that avoids offense to surrounding areas is facilitated through the use of these incinerators. Built in all capacities, they are designed to operate at high temperatures, burning completely all combustible refuse. Smoke and odor are avoided. Write for details to the PITTSBURGH-DES MOINES STEEL CO., 3412 NEVILLE ISLAND, PITTSBURGH 25, PA.

Insures Against Power Failure

52 Unless public buildings are furnished with dependable standby equipment, a sudden power failure could result in disaster. Ready-Power automatic engine generators are prepared to take over the instant regular power fails. They assure the continuation of vital services 24 hours a day. Write THE READY-POWER CO., 11231 FREUD AVE., DETROIT 14, MICH.

Ends Air Accumulations In Water Transmission Lines

53 The SIMPLEX VALVE and METER CO. now manufactures a combination air-release and air-inlet valve that stops pipeline collapse and ends air accumulations. These valves feature a high discharge capacity. Quickly installed, they are hydrostatically tested to 300 psi. *Bulletin No. 1203,* discussing the Type AV valve, may be obtained by writing the company at 6789 UPLAND ST., PHILADELPHIA 42, PA.

Swimming Pools Get Large-Capacity Filter

54 Officials whose job it is to see that public swimming pools operate efficiently, are offered a new heavy-duty filter, the Retractable Tank Model MCR, in capacities ranging from 100 to 2,000 square feet of filtering surface. Each filter may be opened with all plates exposed in some 60 seconds. Head bolts are released by one-lever movement, and the tank is retracted without disconnecting pipe connections. Additional information on diatomite filters is obtainable from the SPARKLER MFG. CO., MUNDELEIN, ILL.

Improved Catch Basin Cleaner

55 A good way to clean catch basins thoroughly is to use a dependable cleaner equipped with pneumatic buckets. THE NETCO DIV., CLARK-WILCOX CO., 118 WESTERN AVE., BOSTON 34, MASS., offers the Netco cleaner, an improved unit that has a hoisting capacity of 1,500 pounds, and removes all debris through openings 16 inches and larger. Operating continuously, the Netco will average from 20 to 30 catch basins a day.

(See page 36 for more Bulletins)

Lithographed on stone for U. S. Pipe and Foundry Co. by John A. Noble, A. N. A.

THIS ILLUSTRATION showing the installation of U.S. mechanical joint pipe in a residential area is a typical scene. It could be either a water, gas or sewer line installed to furnish reliable utility service for present and future generations in the community.

U.S. cast iron pipe centrifugally cast in metal molds is a quality product produced by a modern casting process which is carefully controlled from raw material to the finished pipe.

We are well equipped to furnish your requirements for cast iron pipe and fittings made in accordance with American Standard, American Water Works Association and Federal specifications. U.S. pipe centrifugally cast in metal molds is available in sizes 2- to 24-inch and pit cast pipe in the larger sizes.

United States Pipe and Foundry Co.,
General Office, 3300 First Ave., N. • Birmingham 2, Ala.
Plants and Sales Offices Throughout the U.S.A.

U.S.
cast iron
PIPE
FOR WATER, GAS, SEWERAGE AND INDUSTRIAL SERVICE

☞ **Our General Office is now located in Birmingham, Ala., instead of Burlington, N. J.**

To enforce this...

you need **CYCLONE FENCE!**

FOR the smooth operation of your municipal golf course, and to protect greens and fairways from unauthorized traffic, it will pay you to use strong, good-looking Cyclone Fence. Cyclone Fence is ideal for this type of municipal use because it forces players—gently but effectively—to use authorized entrances and exits. It discourages others from making your course a "short-cut" and guards them from the dangers of flying balls.

Cyclone Fence, made from sturdy "Galv-After" chain link fabric, used in conjunction with a strong high barrier—as shown here—effectively protects passing cars and pedestrians.

If you have a municipal fencing problem, bring it to Cyclone. Our engineering department has had years of experience in estimating, supplying and installing fence on all sorts of jobs. They will be able to give you expert advice, too, without obligation. And in the meantime, write to Cyclone Fence, Department B-24, Waukegan, Illinois, for free literature on Cyclone Fence and Gates.

NO JOB IS TOO LARGE—NO JOB IS TOO SMALL FOR CYCLONE*

CYCLONE FENCE DEPT., AMERICAN STEEL & WIRE DIVISION
UNITED STATES STEEL CORPORATION
WAUKEGAN, ILLINOIS · SALES OFFICES COAST-TO-COAST
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS

**Cyclone is the trade-mark name of fence made only by Cyclone. Accept no substitute.*

U·S·S CYCLONE FENCE

UNITED STATES STEEL

Catalogs for You

Write directly to the manufacturers or use coupon on page 29

Snow Plow Attaches to Jeeps, Trucks, and Cars

56 It takes only two minutes and no tools to attach this new snow plow to any car, jeep or truck. Once connected, the unit will clear snow 24 inches deep and as wide as the car itself, from public roads and driveways. Each lightweight plow is equipped with rigidly reinforced steel blades. An illustrated brochure, discussing the plow, plus a new power sweeper, and a heavy-duty riding tractor, made by the same firm, may be obtained by writing the ESHELMAN CO., DEPT. SP-29, 119 LIGHT ST., BALTIMORE 2, MD.

Better Swimming Pool Filters

57 An exceptionally long life is only one of the advantages attributed to this swimming pool filter. Attractively designed, it features low initial- and low-maintenance cost as well. A 21-page catalog, describing sand and gravel and diatomaceous earth filters, ladders, diving boards, and other equipment for the public swimming pool, is available on request from the AMERICAN POOL CO., NORTH STATE RD., BRIARCLIFF, N. Y. This company also maintains a free technical advisory service.

Portable Bituminous Mixing Plant

58 Mounted on pneumatic tires, this portable bituminous-mix plant may be set up quickly to produce large tonnages. The operator stands on the mixer platform where he controls all charging, mixing and discharging. The sweeping action of the blades discharges a complete batch in some 6 seconds. For an informative, new catalog listing the many advantages inherent in the new unit, address the KWIK-MIX CO., PORT WASHINGTON, WIS.

Electric Towel for Public Washrooms

59 Public washrooms are offered a new Electronic Towel that dries hands in seconds, operating without buttons or pedals. Just place your hands beneath the machine and it starts; remove them, and the unit stops automatically. Full details on the Sani-Dri Electronic Towel will be sent by ELECTRONIC TOWEL CORP., 342 MADISON AVE., NEW YORK, N. Y.

File Drawers for City Offices

60 A new self-adjusting file drawer divider tilts to form a perfect filing "V" and is self-adjusting when additional material is placed in the drawer. It is simple to install and easy to operate. For further information write REMINGTON RAND INC., ROOM 1513, 315 FOURTH AVE., NEW YORK 10, N. Y., for *Folder LBV* 649.

Fire Hydrants and Valves

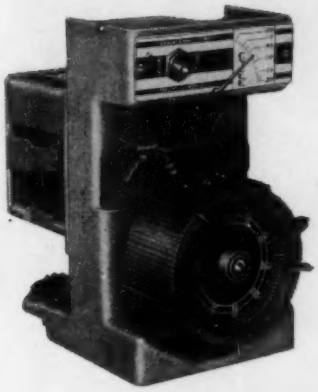
61 Conforming to A. W. W. A. Specifications, these fire hydrants and valves are made by the TRAVERSE CITY IRON WORKS, TRAVERSE CITY, MICH. The company also offers mechanical joint and bell and spigot fittings, flanged or special fittings, and fabricated pipe for pumping stations and sewage treatment plants.

(See page 38 for more Bulletins)

Ask for a demonstration . . . of the NEW ***Flexible*** **MULTI–DIAL**

EAGLE "EF20" TRAFFIC CONTROLLER

EASIEST TO MAINTAIN

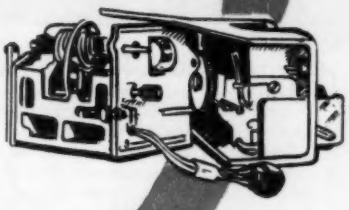


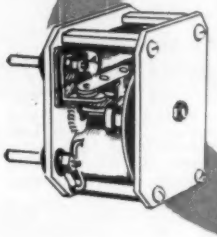
The new Eagle Multi-Dial controller has been designed with all parts accessible for ease of maintenance using only simple tools.

Cycle Unit

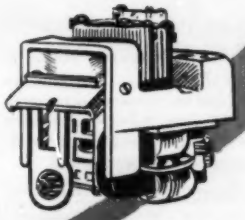
All wiring is color coded.

Motor is jack plug connected to cycle unit.





Separate unit flasher, with ball bearing, induction disc-type motor, is jack mounted.



Cycle unit electrically and mechanically jack mounted.

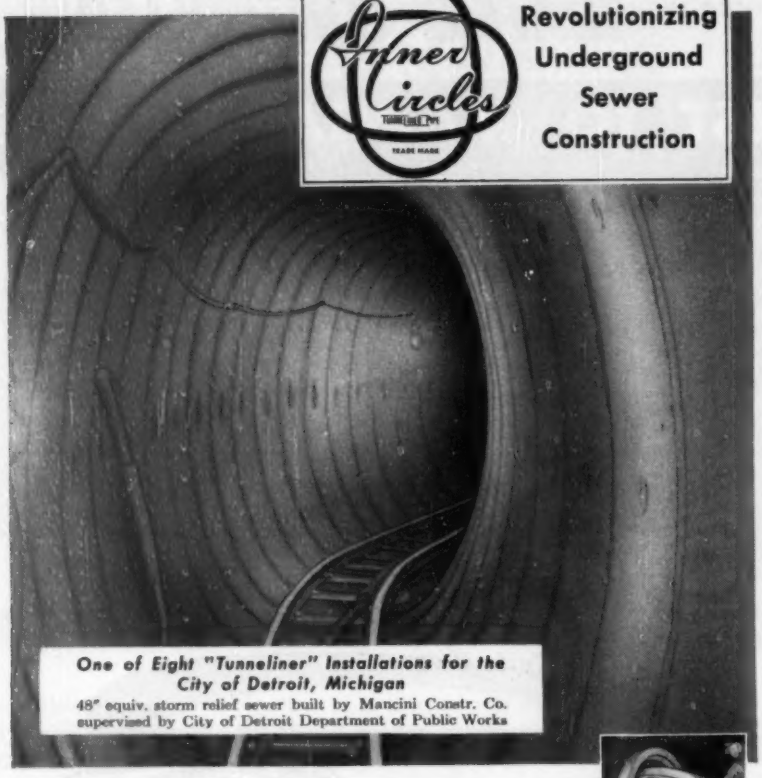
Eagle's outstanding features have been designed to meet all conditions required by traffic Engineers and maintenance men.

EAGLE SIGNAL CORPORATION *Moline, Illinois*

Now! You Can Pass PIPE THROUGH PIPE on CURVES too!

Inner Circles

Revolutionizing Underground Sewer Construction



One of Eight "Tunneliner" Installations for the City of Detroit, Michigan

48" equiv. storm relief sewer built by Mancini Constr. Co. supervised by City of Detroit Department of Public Works

"*Tunneliner*" methods using Inner Circles precast concrete pipe, developed by Lamar, offer distinct advantages over other types of tunneling. Oval-shaped sections of full ring reinforced pipe of identical size are passed through themselves as excavation progresses to form a continuous conduit of pretested strength. This revolutionary new method of installing concrete pipe underground is aimed at solving all the difficulties encountered in tunneling.

NO EXCAVATION AT SURFACE—NO TRAFFIC BLOCKED OFF —SEWER COSTS OFTEN ARE MATERIALLY REDUCED

Unskilled workers quickly learn "*Tunneliner*" methods in the first few hours on the job. Less equipment is needed, yet sewers are completed in faster time. Advantages have been thoroughly proved in tunneling through wet sand, river muck, loose rock and various clay conditions.

Sizes of "*Tunneliner*" pipe now available—33" through 72"
All necessary special equipment is furnished at a nominal rental charge.

For complete information—write, wire or telephone

LAMAR PIPE & TILE DIVISION

AMERICAN-MARIETTA COMPANY

Grand Rapids 9, Michigan

Inner Circles "*Tunneliner*" Pipe is available anywhere in the nation through licensees or through divisions and subsidiaries of the American-Marietta Company—The Lamar Pipe and Tile Company, Concrete Products Company of America and Universal Concrete Pipe Company. 32 plants coast-to-coast.

Worker guides section of oval-shaped pipe carried through tunnel by Lamar *Tunnelugger*.

Section is easily tilted upright on *Tunnelugger* arm.

Section is turned, then seated by *Tunnelugger*.

More Literature

Write directly to the manufacturers or use coupon on page 29

Mower Trims City Lawns

62 Simplicity, someone once said, is the secret of most successful operations. The Packwood power mower is simply designed with very few moving parts. Its rollers are placed in three strategic positions beneath the rotor, assuring easy handling. As for mowing, the unit cuts over holes and mounds without digging into the lawn. It shaves the grass on top of walks, cuts to within ½-in. of objects, and smooths uneven lawns. Grass cuttings are evenly thrown to the side of the mower. S & G MFG. CORP., P. O. BOX 1309, NEW ORLEANS 10, LA., will furnish literature.

Handles All of City's Overhead Work

63 Municipalities are offered a solution to their overhead installation, service, and maintenance problems in the form of a new mechanical aerial ladder which may be mounted on any type chassis. The ladder is available in ground-to-platform heights of 23, 27, and 31 feet, and elevations to 72°. It is rotated by means of one-man-operated hand cranks on the ladder pedestal mast. Detailed specification sheets on the new series 2200 MAL are obtainable from the J. H. HOLAN CORP., 4100 W. 150 ST., CLEVELAND 11, OHIO.

Counts Votes in Less Time

64 A total of 903 votes were cast at Pavilion Township, Mich., during the 1952 presidential election. According to the *Kalamazoo Gazette*, it took exactly 17 minutes to count the results with two automatic voting machines. Both large and small communities can use these machines effectively. Get complete information by writing the AUTOMATIC VOTING MACHINE CORP., JAMESTOWN, N. Y.

Provides Effective Traffic Safety

65 Any community using these clean, legible signs will find the safe guidance of motor traffic an easier task. Tassco signs are simple to read around the clock. Both standard units, and special signs made to specifications are available. For a guide to effective traffic safety, write TRAFFIC AND STREET SIGN CO., 84 FOUNDRY ST., NEWARK 5, N. J.

Dallas Water Flows Through Concrete Pipe

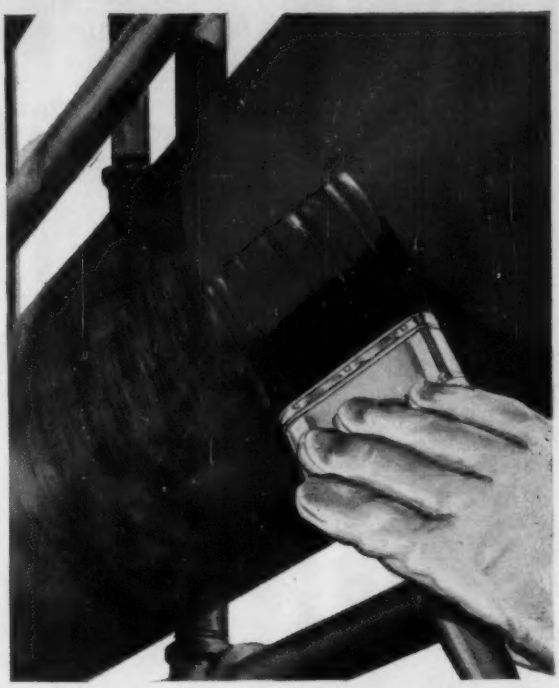
66 Concrete pressure pipe was first installed in the Dallas, Texas water supply system in 1915. Since 1945 several additional miles have been built, and at present a new 23,300-ft. concrete pipe line is under construction. This pipe requires little maintenance and has a permanent high carrying capacity. For detailed literature, write AMERICAN CONCRETE PRESSURE PIPE ASSOC., 228 N. LaSALLE ST., CHICAGO 1, ILL.

Valves and Hydrants to Fit Existing Water Pipe

67 Bell-end, mechanical-joint bronze-mounted gate valves and hydrants to fit the pipe in your community's water-distribution system, are obtainable from the EDDY VALVE CO., WATERFORD, N. Y. Both valves and hydrants are simple to install with a ratchet wrench and a minimum amount of labor. Both are long-lasting and dependable.

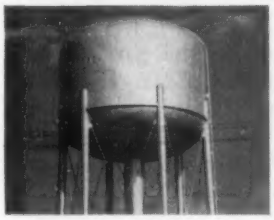
Beautify as you protect city equipment, water and sewage works, fences, stop signs, fire hydrants, street lights, tanks, trucks, etc.!

RUST-OLEUM saves time, money, and metal!—and beautifies as it protects! Brush RUST-OLEUM 769 Damp-Proof Red Primer right over the remaining rust after scraping and wirebrushing to remove rust scale and loose rust! Easy as that to save even badly rusted metal! For colorful beauty, use any of RUST-OLEUM's distinctive finish coatings in ALUMINUM, RED, WHITE, GREEN, GRAY, BLUE, ORANGE, BLACK, and many others. RUST-OLEUM resists rain, snow, sun, fumes, heat, salt water, salt air, weathering, etc. to give you colorful, lasting protection. See your local classified telephone directory under Rust Preventives or Paints for nearest source of supply, or mail coupon today.

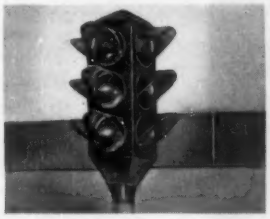


STOP RUST! with RUST-OLEUM®

Available in Aluminum, Black, White, Red, Green, Gray, Blue, Orange and many others.



Water tanks, fuel tanks—all need RUST-OLEUM decorative beauty and lasting protection.



Stop lights, stop signs, and fire hydrants are another way to utilize RUST-OLEUM protection.

RUST-OLEUM matches such original manufacturer's colors as Harvester, Caterpillar, and many others for your tractors, trucks, etc.

Use bright RUST-OLEUM colors on your tanks, pumps, pipes, and machinery indoors and out.

Street lights need RUST-OLEUM's year 'round resistance to salt water, salt air, rain, snow, sun, fumes, heat and weathering.

You'll find RUST-OLEUM at work in water and sewage plants all over the country—giving decorative beauty and lasting protection.

ATTACH TO YOUR LETTERHEAD AND MAIL TO:

RUST-OLEUM CORPORATION, 2512 Oakton Street, Evanston, Illinois

- ☐ Please Send Me A FREE TEST SAMPLE To Apply Directly Over Sound Rusted Surfaces.
- ☐ Complete Literature With Color Charts.
- ☐ Have A Qualified Representative Call.
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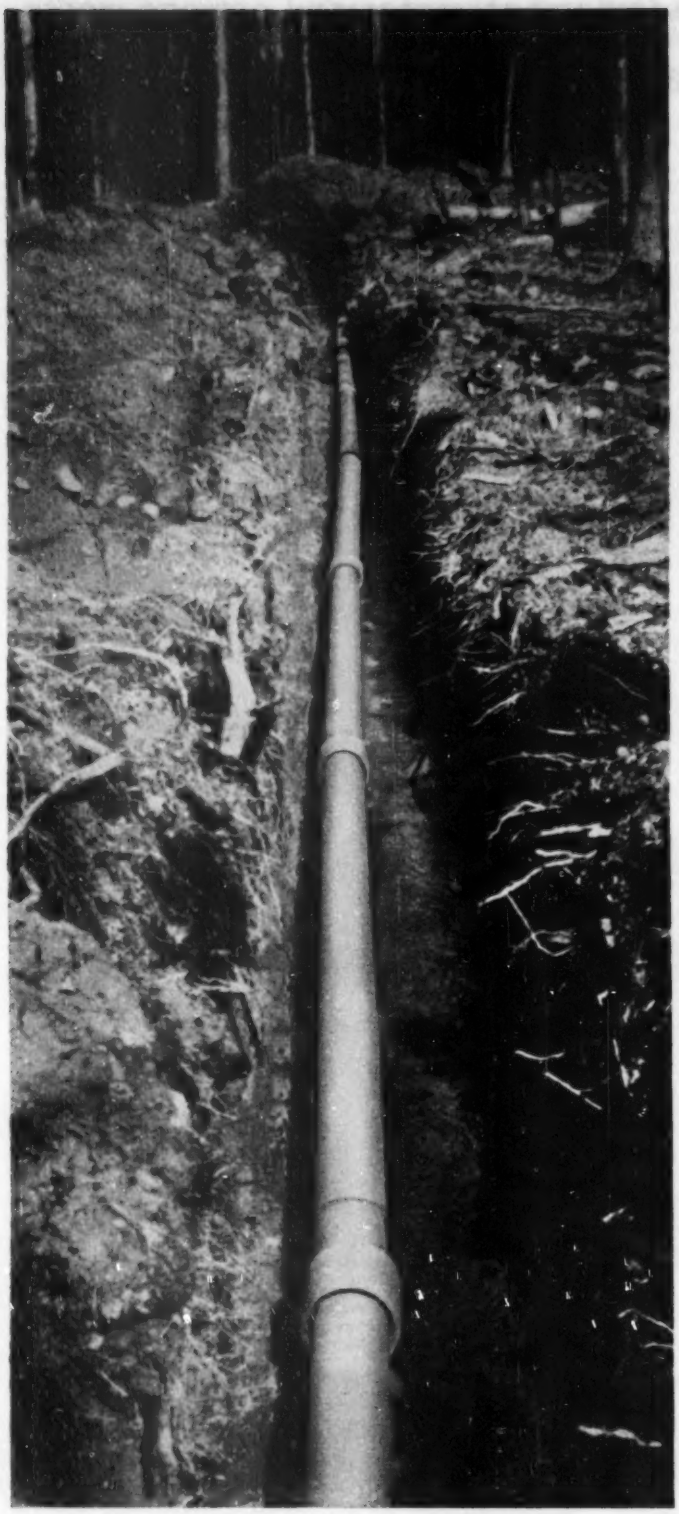

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ASBESTOS-CEMENT PIPE

installed in Penna. State Park

Hickory Run State Park in White Haven is one of several Pennsylvania Parks in which "Century" pipe has been used to supply water for recreational areas. For generations to come, this line will carry its full capacity, without the need for maintenance.

Long, trouble-free service is to be expected of "Century" pipe. Being non-metallic, this exceptionally strong, durable pipe cannot tuberculate, rust, or corrode. Its bore stays smooth and frictionless, keeping pumping costs low. It is light in weight, easy to lay, low in cost.

Before you decide on the pipe for *any* water-carrying line, for economy's sake you ought to find out all about "Century" pipe. Write for "Mains Without Maintenance"—an informative free booklet of real value to anyone concerned with water main construction.

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Barber-Greene

840 BITUMINOUS PAVING PLANT

B-G 840 Paving Plant, showing use of bulkhead feed with two-gate feeder for proportioning sand and gravel. 2, 3 or 4 aggregates may be blended in this manner.

PRACTICAL . . . PROFITABLE

UP TO 40 T. P. H.

The capacity range of this B-G Paving Plant has proved to be the most practical for a broad range of users. Output is high enough to supply materials for average-sized new construction and resurfacing jobs—investment is low enough to assure profitable operation at minimum capacities, or for intermittent operation.

ALL TYPES OF MIXES

Bituminous mixes of all types are produced at lowest cost with this B-G Plant. This includes the full range—all temperatures, all gradations and all binders. For "high-type" mixes, the aggregates are blended at the feeding end. Quality and uniformity are consistently high.

TRULY PORTABLE

Each basic unit of this plant—Mixer and Dryer-Dust Collector—is mounted complete on its own trailer-type pneumatic-tired chassis. Built-in hot and cold elevators and dryer stack fold down for transport. There is a minimum of dismantling—the plant can be moved and readied for work in new locations in a few hours' time.

EASIEST TO ERECT

No special erection equipment is needed to set up a B-G Paving Plant. No excavation or footings required. Units are spotted in place by truck, adjustable jacklegs are lowered to ground level, and the plant is ready for operation once the required auxiliary equipment is in place.

LOW-COST MAINTENANCE

The B-G Model 840 Paving Plant is easy to maintain. All moving parts are quickly accessible for inspection and adjustment. B-G Distributors offer fast emergency parts service, and are staffed with factory-trained experts to help you keep your B-G Paving Plant at top operating efficiency.

AUTOMATIC PROPORTIONING

Simple to understand and to operate, the B-G Paving Plant eliminates the human element in producing a consistently uniform mix. Once the bitumen and aggregate proportions have been set, they cannot vary as the positive displacement pump and aggregate apron feeder are positively interlocked. Proportioning is continuous, automatic and accurate.

see your **B-G distributor** ...or write

Barber-Greene Company, Aurora, Illinois, U. S. A.

powered for Performance

26' Bryant-built stock work boat, 25 H.P. Evinrude outboard motor installed in stern well.

BIG TWIN

25 O.B.C. certified B.H.P. at 4,000 R.P.M. Gearshift, separate plug-in fuel tank.

PROVED PERFORMANCE! No "maybe" when it came to picking the power plant for this husky work boat. In identical hulls the Evinrude 25 H.P. Big Twin had conclusively proved its advantages over conventional engine installations of the same rated horsepower. Higher speed, light or loaded. Greater maneuverability. Important space saving. Easy beaching. *Far lower cost*—as much as $900 *less* than the conventional installations.

With *performance,* an Evinrude gives you stamina and low upkeep you couldn't beat in any type of motor. A complete line, 3 to 25 H.P., to meet the widest range of work boat needs. See your Evinrude dealer—look for his name under "Outboard Motors" in the yellow pages of your phone book. For complete literature write EVINRUDE MOTORS, 4339 North 27th Street, Milwaukee 16, Wisconsin.

In Canada: Manufactured by Evinrude Motors, Peterborough, Ontario

Big Twin is also available in 20" extra depth model suitable for transom heights to 35". Photo shows Bristol Bay, Alaska, sailing gillnetters converted to power with this motor.

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OUTBOARD MOTORS

Speed and simplify all your tax accounting

with this

BURROUGHS TAX ACCOUNTING MACHINE

It computes . . .
as it types . . .
as it posts!

The Burroughs Tax Accounting Machine offers you the most practical and satisfactory means of automatic mechanization in tax accounting. In *one operation* it will multiply; compute and total tax installments; write records, tax receipts, bills; accumulate column totals.

This Burroughs is the only typewriter-accounting machine with direct multiplication. The operator simply enters each valuation. The machine *automatically* multiplies it by the tax rate, computes the answer to the nearest cent and *posts factors and answer* to tax bill, receipt and tax record. The tax rate can be changed instantly. These automatic Burroughs features eliminate much work and virtually eliminate the chance for human error.

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Here is a machine that performs an amazing variety of bookkeeping operations and produces tax records with infinite variations . . . it will be of just as much value to you tomorrow as it is today. It has the flexibility to handle *all* of today's tax accounting complexities. It will easily be adaptable to any possible future changes in tax accounting methods or procedures.

Find out how Burroughs Tax Accounting Machines can help you. Just call your local Burroughs office or use the coupon.

MAIL THIS COUPON for your copy of "New Speed, Ease, Simplicity in Tax Accounting." It explains in detail the versatility and flexibility of Burroughs Tax Accounting Machines.

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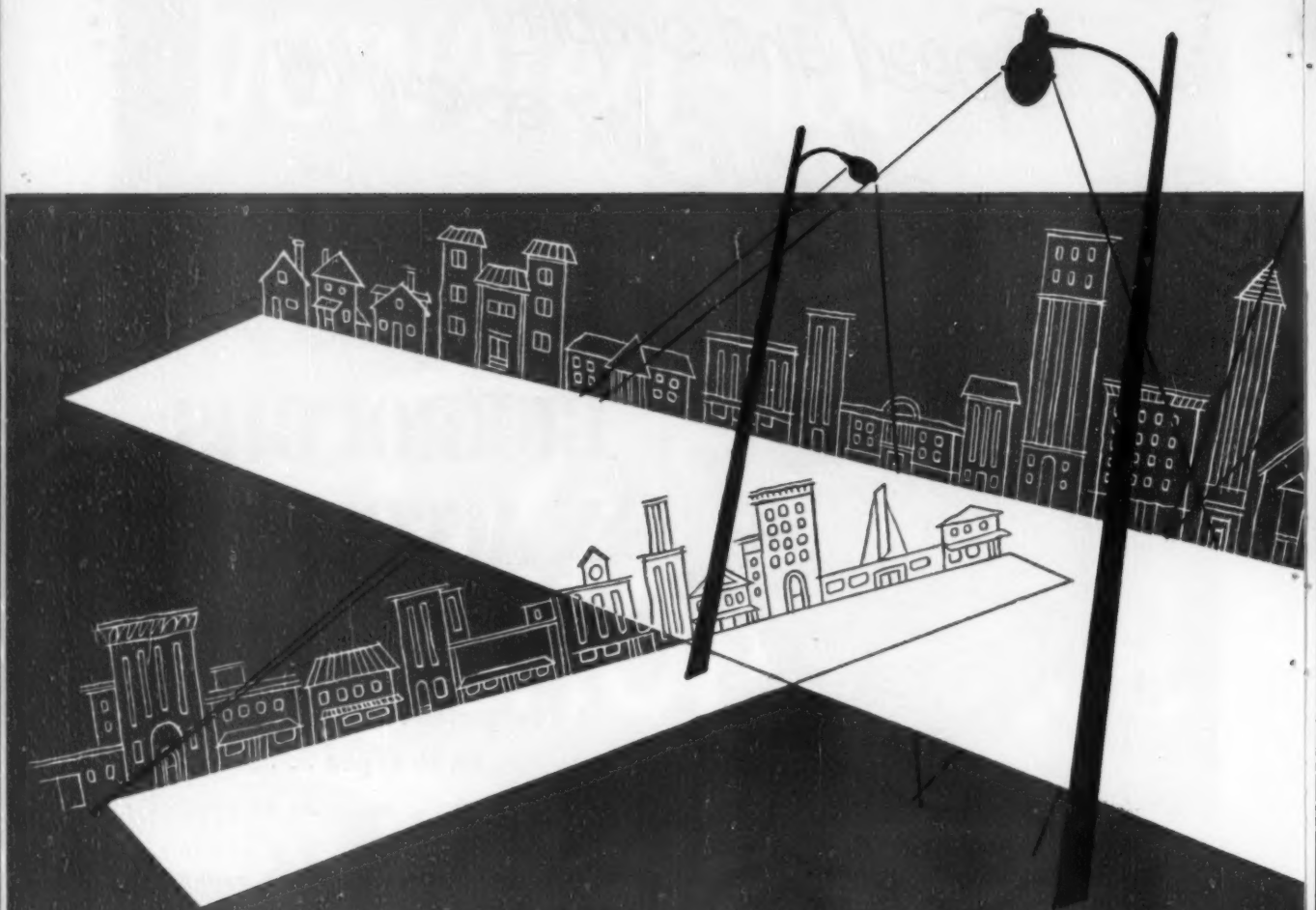

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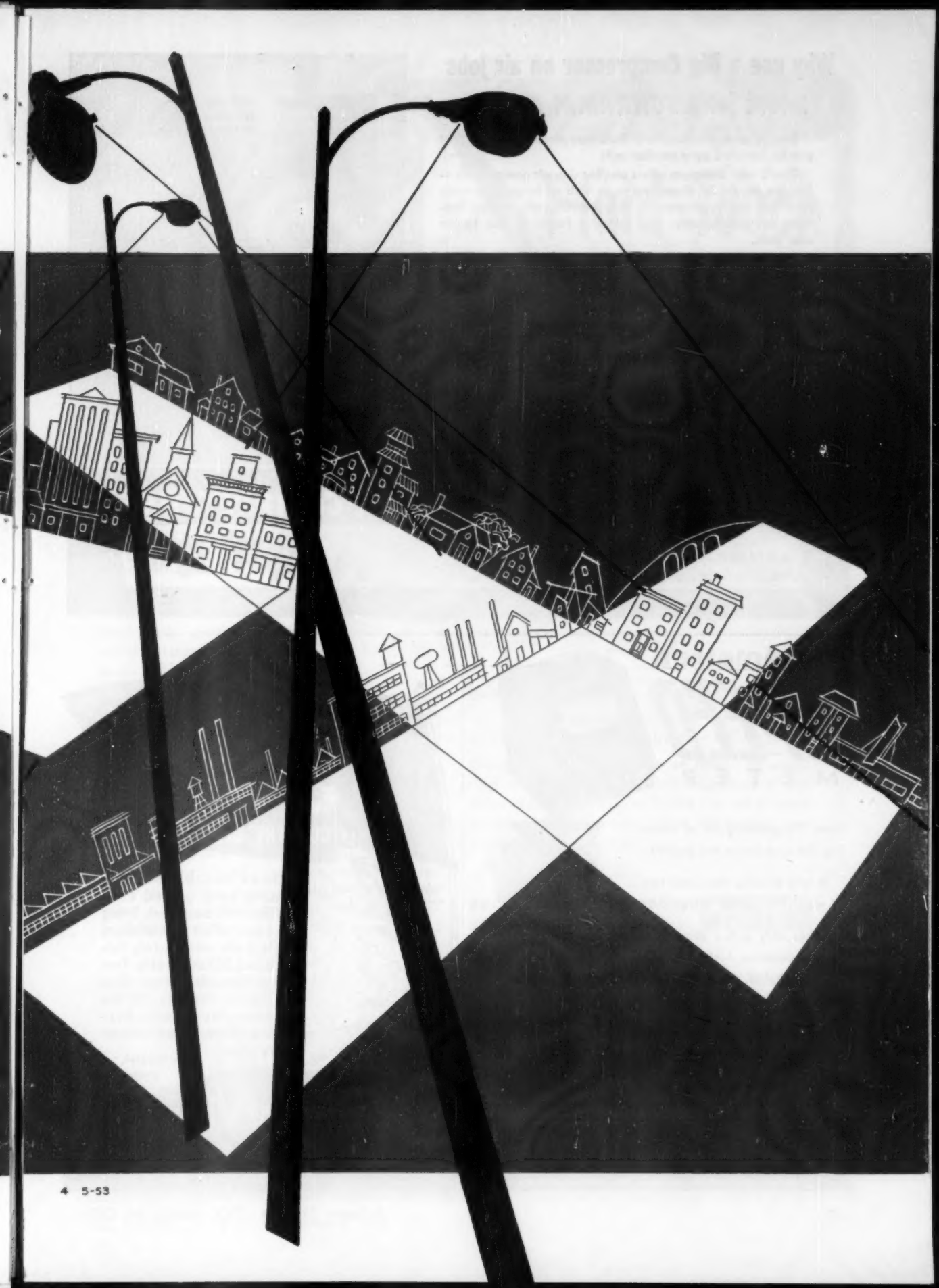

Why use a Big Compressor on air jobs meant for a *SCHRAMM 60 C.F.M.?*

It costs money to haul a BIG air compressor to a job that can be handled by a smaller unit!

That's why Schramm offers smaller size air compressors — like the Model 60 illustrated — as well as large units — to save you money. Moreover, they embody all the fine features of workmanship and material found in our larger size units.

Popular uses of Schramm smaller compressors include trench digging, backfill tamping, paint spraying and roofing material, operating paving breakers, 20 and 40# rock drills, concrete vibrators, saws, etc.

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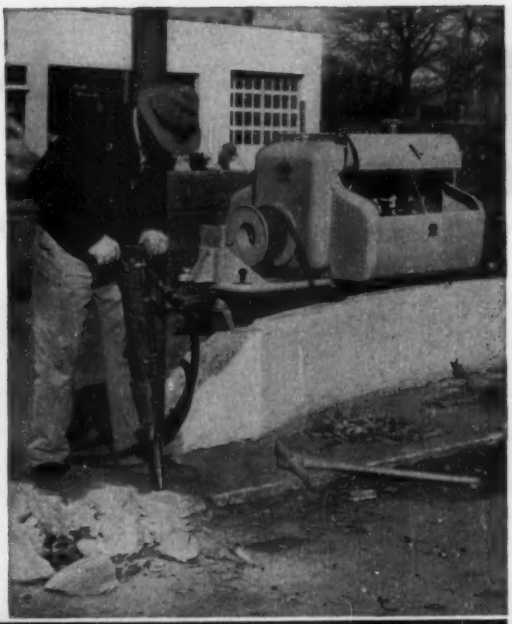

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takes the guessing out of catching the speeder on the highway.

It tells at once the exact rate at which the driver is traveling.

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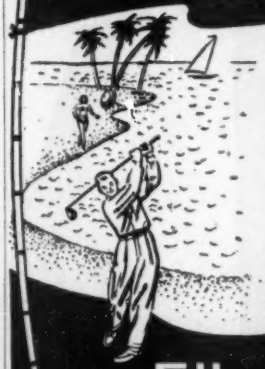

Unbelievable but true, many brick ground floor villas with bedroom, living room, electric kitchen, tile bath, completely furnished, $59.50 weekly. Two and three-bedroom villas slightly higher. At the ocean, playgrounds, shopping center, private country club.

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... SAVES SO MUCH

Here a city-owned Hydrocrane excavates for water mains. Quick-set outriggers provide outstanding machine stability—even permit the ⅜-yd. clamshell bucket to be handled with standard boom in horizontal position.

Every Hydrocrane operation is fully hydraulic—swing, line hoist, boom telescope, boom hoist, bucket close, outrigger set and retract.

That's one big reason why this ⅜-yd. speedster means added savings on dozens of municipal jobs. For example—

Street Repair—Amazingly precise control permits operator to ease boom and bucket under branches and wires, quickly, safely. This fine-touch control gives operator better "feel" of his bucket load—a big advantage when digging around pipe and underground cable. Also, hydraulic bucket digs in any position from vertical to full horizontal—excellent for work in cramped quarters.

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Crane to Hoe in Less than an Hour. By actual time test, an owner converted from crane to hoe boom in less than an hour. That's just one of many money-saving advantages. Send the coupon now for interesting new literature.

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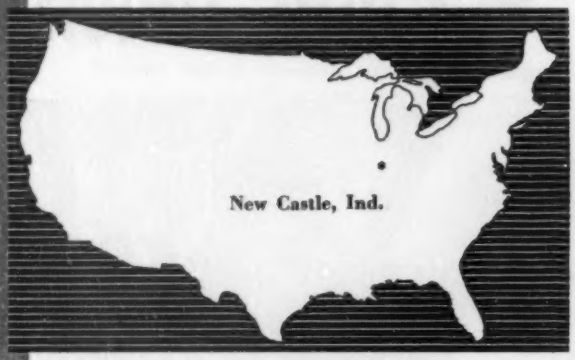

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A few years ago Henry County went out entirely for voting machines, and we wouldn't go back to the old paper ballot method of voting. . . . . .

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Editorial—
Courier-Times
New Castle, Ind.
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AUTOMATIC VOTING MACHINE CORP.
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That's why in hundreds of hospitals, schools, public and private institutions, hotels, theaters and other buildings you'll find *Fairbanks-Morse stand-by power generating sets.*

These dependable power producers go on *automatically* the instant that city or high line power is cut off.

Models for installation in large buildings—one or more units—start at 10,000 watts, ranging upward to 40,000 watts. Smaller units also are available for police and fire department uses.

Send for free 20-page catalog. Address Fairbanks, Morse & Co., Chicago 5, Ill.

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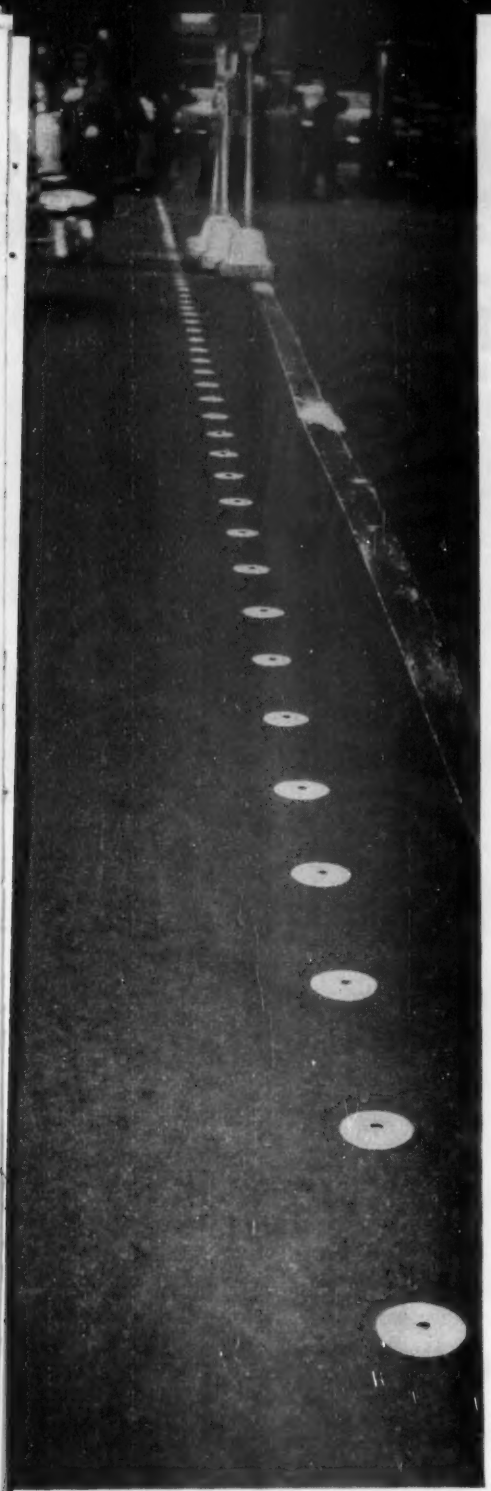

Durable markers of Tenite Butyrate replace fading painted lines at busy New York City intersection.

eliminate repainting of traffic control lines

a new method of traffic marking, using disks of Tenite Butyrate plastic, is saving municipalities the greater portion of their previous costs for painted lines.

Extremely tough and resilient—and also chipproof in color—the Tenite markers last for years under heavy traffic conditions. Take, for example, an installation made over two years ago at a busy New York City intersection. The city's Traffic Control Engineer reported recently that more than two million vehicles a month have passed over these markers and they are still in good condition, whereas painted lines would have to be renewed at least once every thirty days.

Bright Tenite markers—available in white, yellow, or red—resist dirt and tarnishing, and remain highly visible in practically all weather conditions. They present no drying problem—are ready for use immediately upon installation.

In addition to use for municipal traffic lanes and crosswalks, Tenite markers are ideal for garages, parking areas, and industrial plant installations.

If you'd like more information, or help in locating a source of supply, just write or send coupon to

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can turn a *catastrophe* into a mere inconvenience!

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New O'Brien SEWERKING, equipped with solid rods.

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Now—save money on sewer-cleaning equipment!

Here's the new O'Brien SEWERKING that can be used with flexible steel cable or solid rods! With this new machine, you can handle more sewer jobs—without paying for expensive, big machines. O'Brien SEWERKING is easy to operate; has a powerful, reversible electric motor (or can be used with gasoline engine) that turns cutting knives and cable to quickly clear line of roots, mud, etc. Cleans lines up to 14" in diameter, 500 feet long. Safe operation—no hand feeding of cable necessary.

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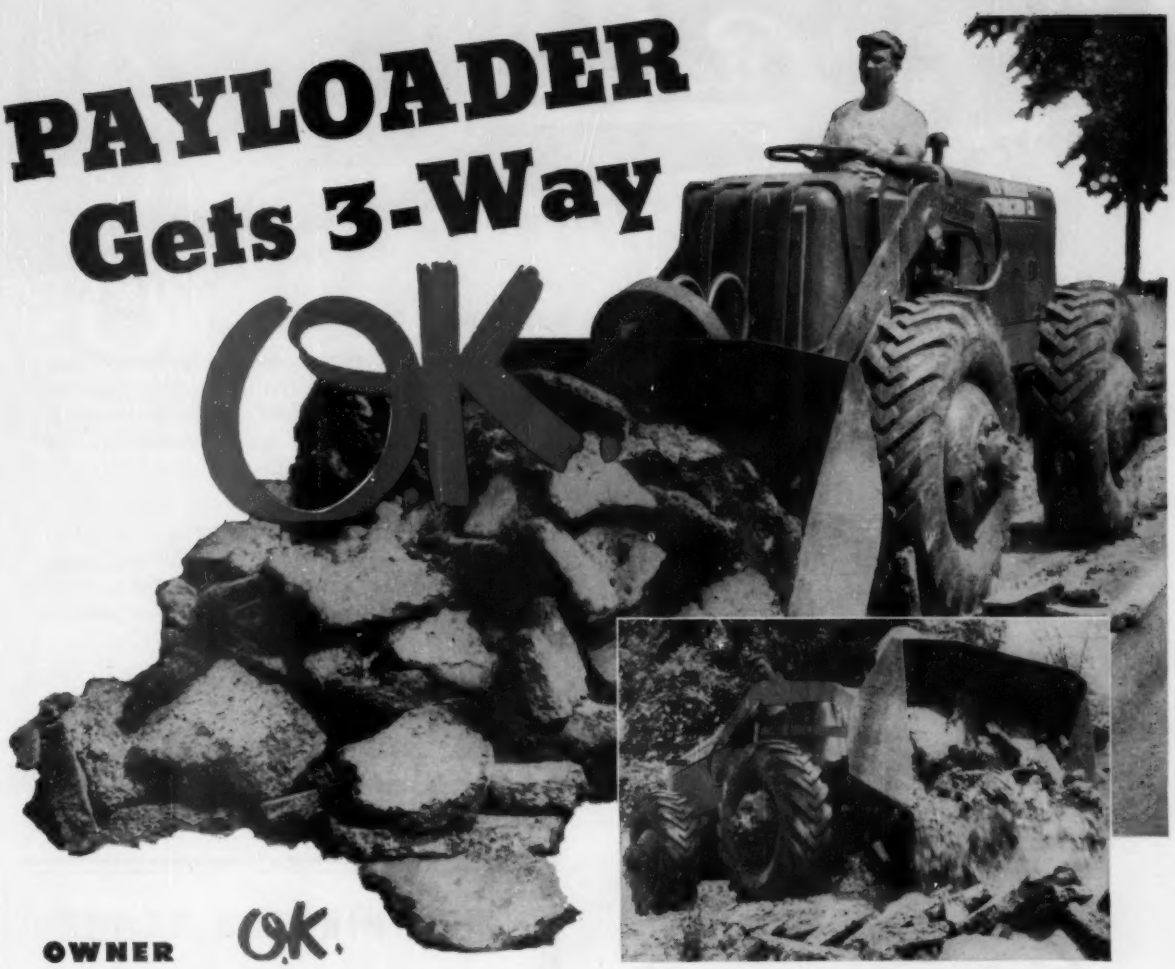

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"I couldn't get along without my Hough 'PAYLOADER'. It does a rugged job and is easy to handle when the going is rough", says Joseph J. Girardi, President of New Rochelle Construction Co.

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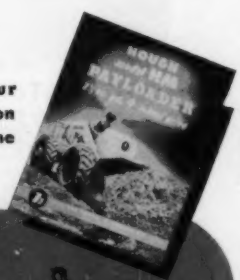
WRITE for name of your Hough Distributor and information on the complete "PAYLOADER" line of seven sizes.



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extra POWER, extra CAPACITY, extra ECONOMY

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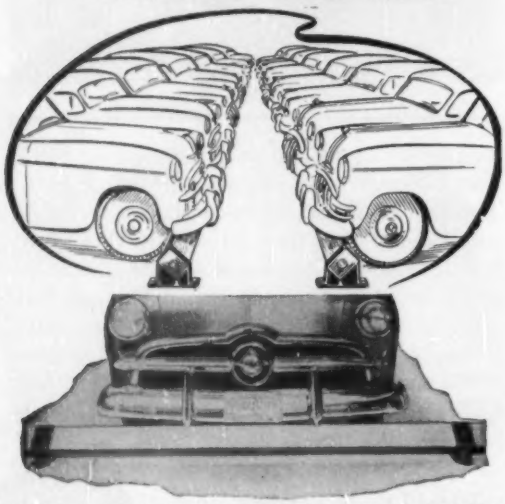

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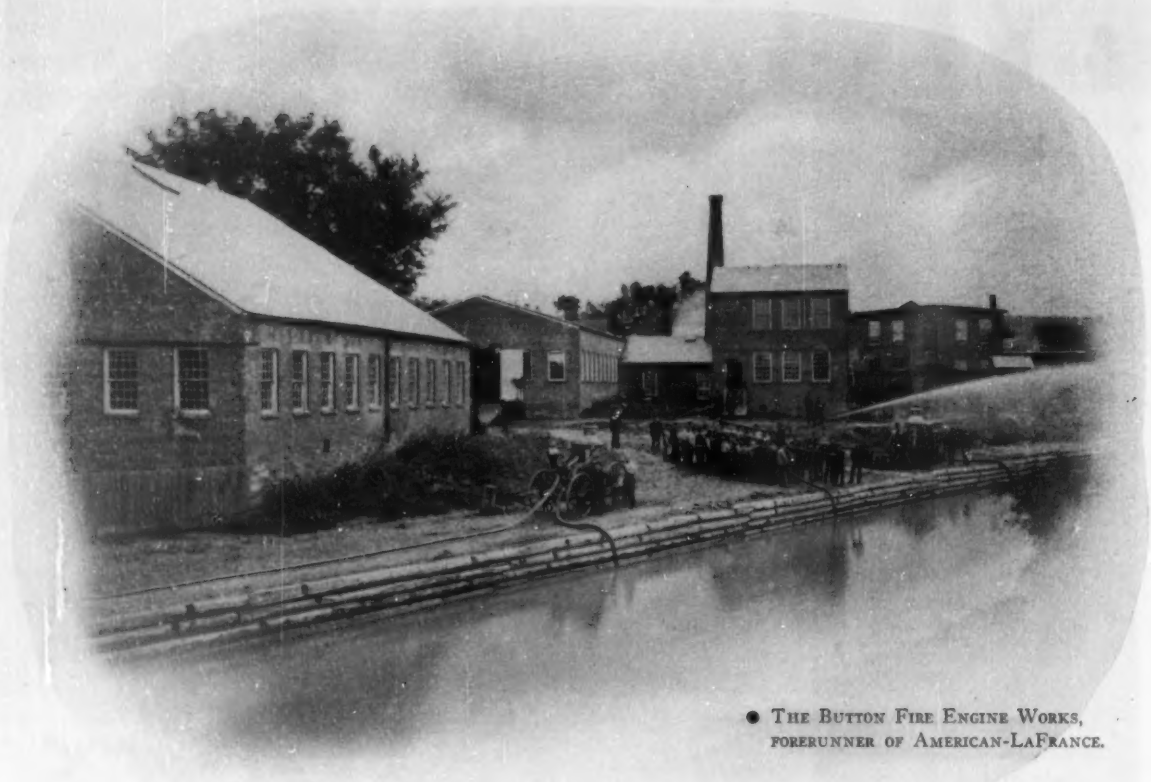

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Growing steadily . . .

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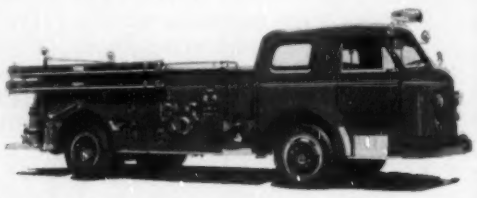

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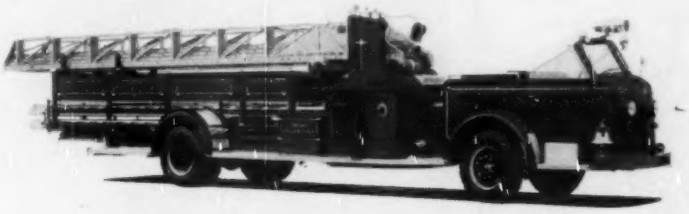
the better to serve you . .

Generation after generation of expert craftsmen have contributed their skill and "know how" to build the world's finest fire engines. The consistent dependability of American-LaFrance fire engines has earned the confidence of the fire service. This confidence has made possible the continuous growth of American-LaFrance. The original factory occupied 6 acres of land while today American-LaFrance operations require 24 acres for manufacture and testing.

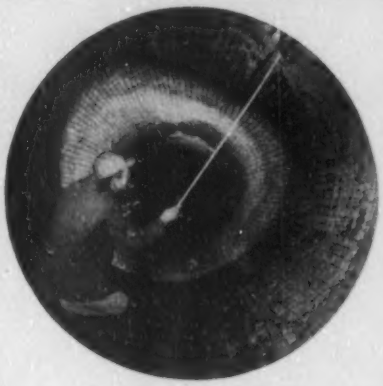


AMERICAN-LAFRANCE-FOAMITE CORPORATION

ELMIRA, NEW YORK, U.S.A.

LAFRANCE FIRE ENGINE AND FOAMITE, LTD.

TORONTO, ONTARIO, CANADA



Note distorted crown of the old brick sewer.

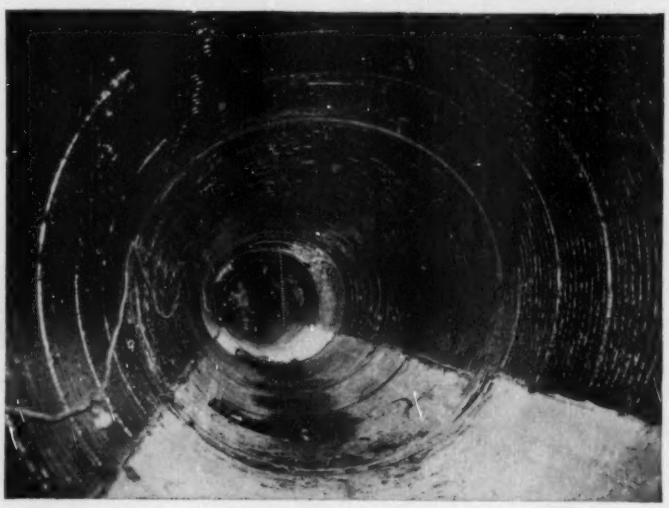
Are Your Sewers Failing?

You won't know unless you look. Failing sewers often keep their secret until it is too late.

In Milwaukee, inspection showed an old 96-inch combined brick sewer was at the point of failure. Various materials were considered for the repair job, but Armco ASBESTOS-BONDED Sewer Pipe was finally selected. It was strong, corrosion-resistant and its installation would not disturb the existing structure or materially reduce the waterway area. The pipe was installed in 8- to 20-foot lengths, reducing the number of joints required. Costs were low.

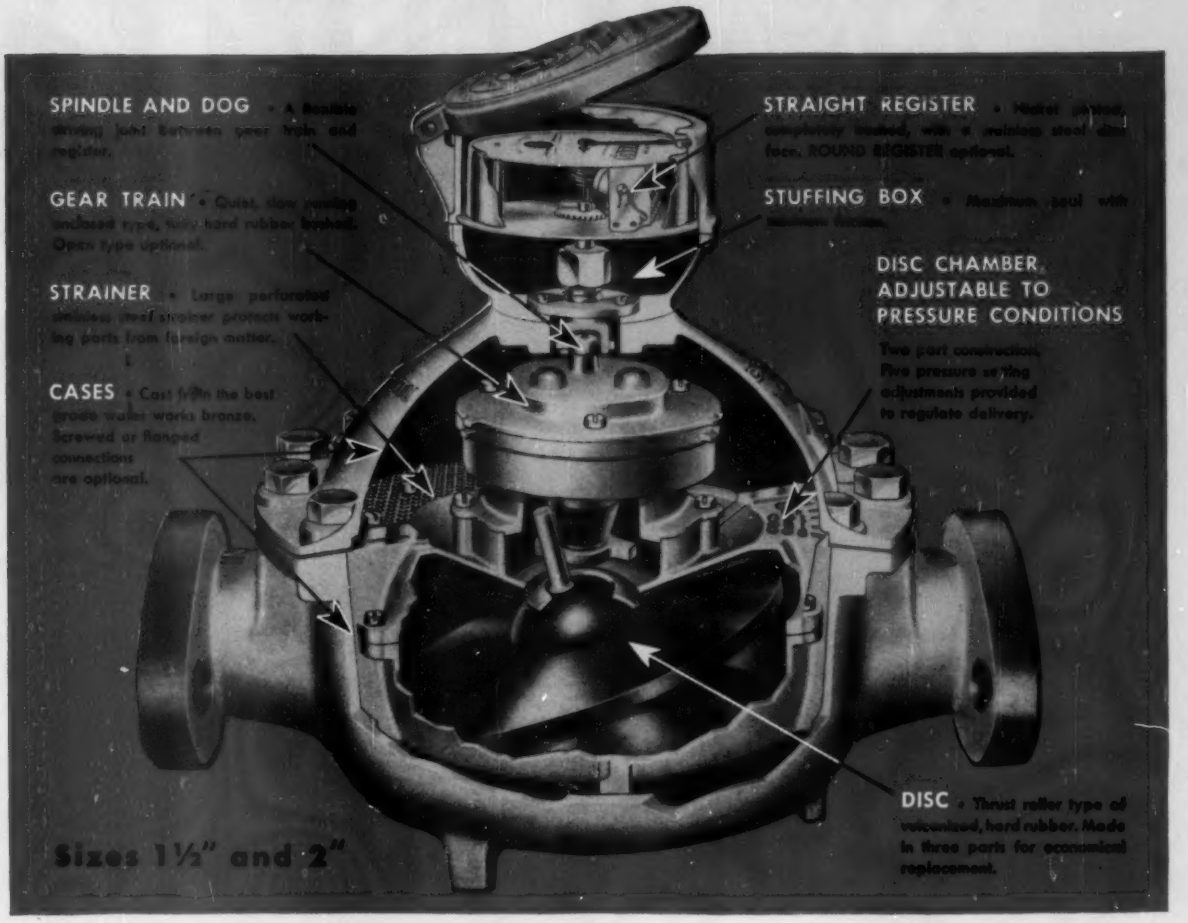
Armco Corrugated Metal Pipe is also widely used for new sanitary and storm sewers as a safeguard against future trouble and expense. Why not write us today for details? And don't forget about planning an inspection for your present sewer. It may save trouble later on. Armco Drainage & Metal Products, Inc., 1974 Curtis Street, Middletown, Ohio. Subsidiary of Armco Steel Corporation. Export: The Armco International Corporation.

ARMCO SEWERS



Armco ASBESTOS-BONDED Corrugated Pipe in relined Milwaukee sewer. PAVED-INVERT protects against erosion.

INSIDE INFORMATION
about Rockwell Type 6 Disc Meters



These Quality Features Mean —

GREATER ACCURACY, LONGER METER LIFE

For measurement accuracy that lasts on all your 1½" and 2" services, you can make no better choice than the Rockwell Type 6 meter. In it, you'll get every wanted feature and many extras including a measuring chamber that can be adjusted to five different positions to regulate delivery. This prolongs meter life by governing maximum allowable rate of flow in accordance with the line pressure, and prevents excessive wear due to over-speeding.

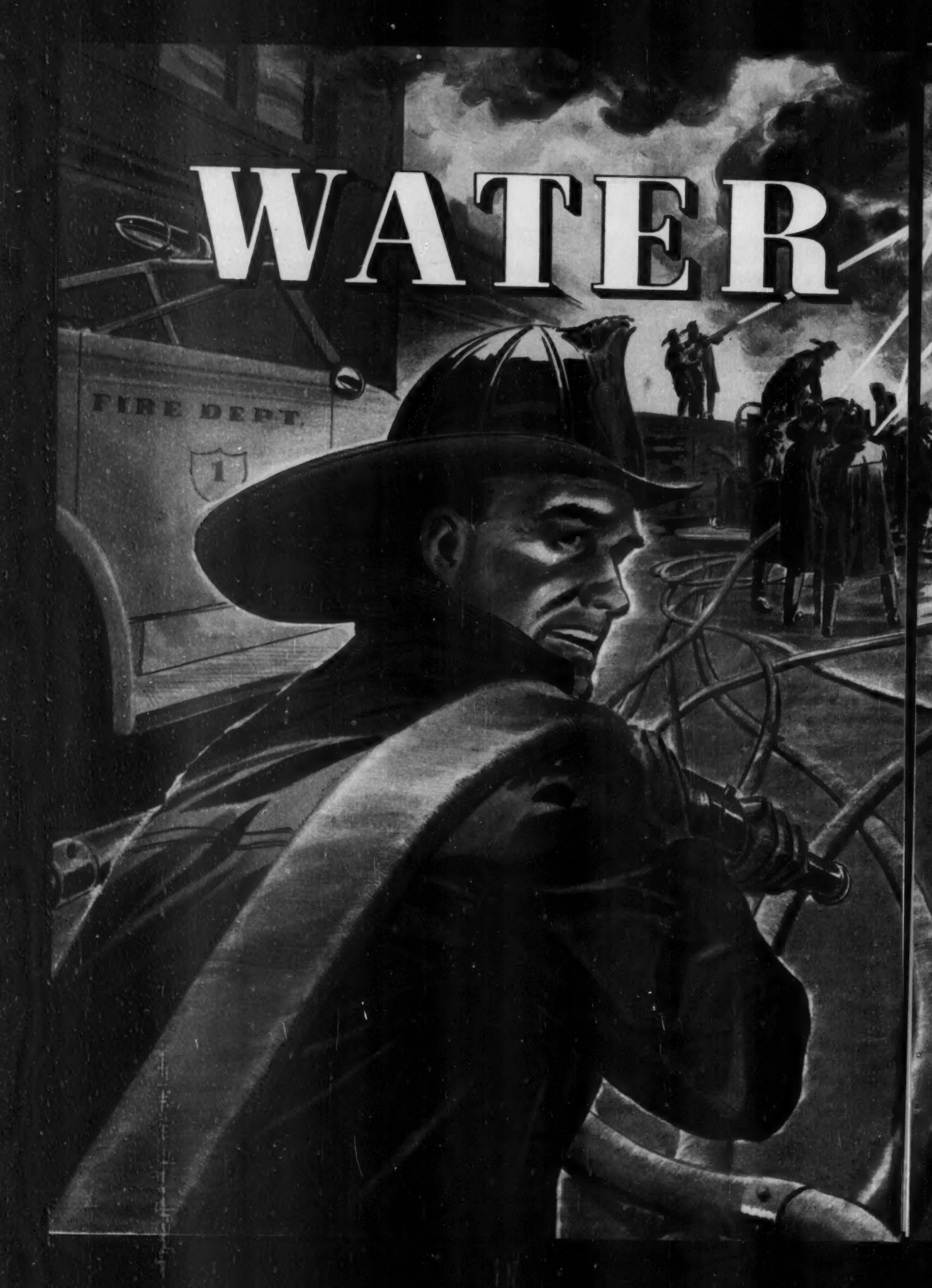
To get all the revenue from profitable commercial and small industrial services, invest now in Rockwell Type 6 meters. They will repay their cost many times through a superior degree of maintained accuracy and lowered repair costs.

ROCKWELL MANUFACTURING COMPANY

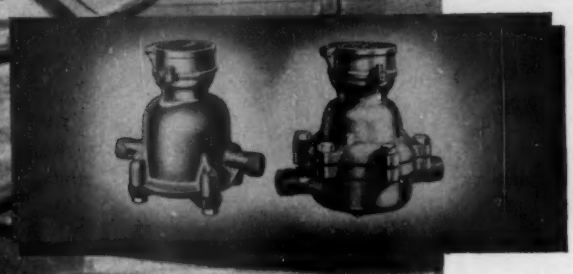
PITTSBURGH 8, PA. Atlanta Boston Chicago Houston
Los Angeles N. Kansas City New York Philadelphia
Pittsburgh San Francisco Seattle Tulsa

In Canada: Peacock Brothers Limited

The Symbol for Service, Quality and Performance in Water Meters


WATER
FIRE DEPT.
1

is vital...



BADGER meters conserve it!

Water saves lives in emergencies . . . and millions of gallons are required for fire-fighting alone each year. Badger water meters help thousands of communities to conserve water for such needs . . . measure water precisely for homes and industry . . . provide an accurate check on water usage and water waste. And the record of Badger meter performance, known everywhere, has caused thousands of waterworks men to say—"It pays to choose Badger!"

BADGER WATER METERS

BADGER METER MFG. CO., Milwaukee 45, Wisconsin

"Measuring the water of the world"

MUELLER®

Install needed control valves without a shutdown!

Quickly and easily installed, these inserting valves are especially designed for installation and use where additional valving is required and a shutdown of the system would be impractical or hazardous.

When installed, the inserting valve may be operated like an ordinary gate valve to control a section of line. Mechanism of the valve is identical to that of standard Mueller AWWA Gate Valves and parts are interchangeable.

Inserting valves are available in 4", 6" and 8" sizes. The size of the valve corresponds to the size of the main. All valves have full-size seat openings.

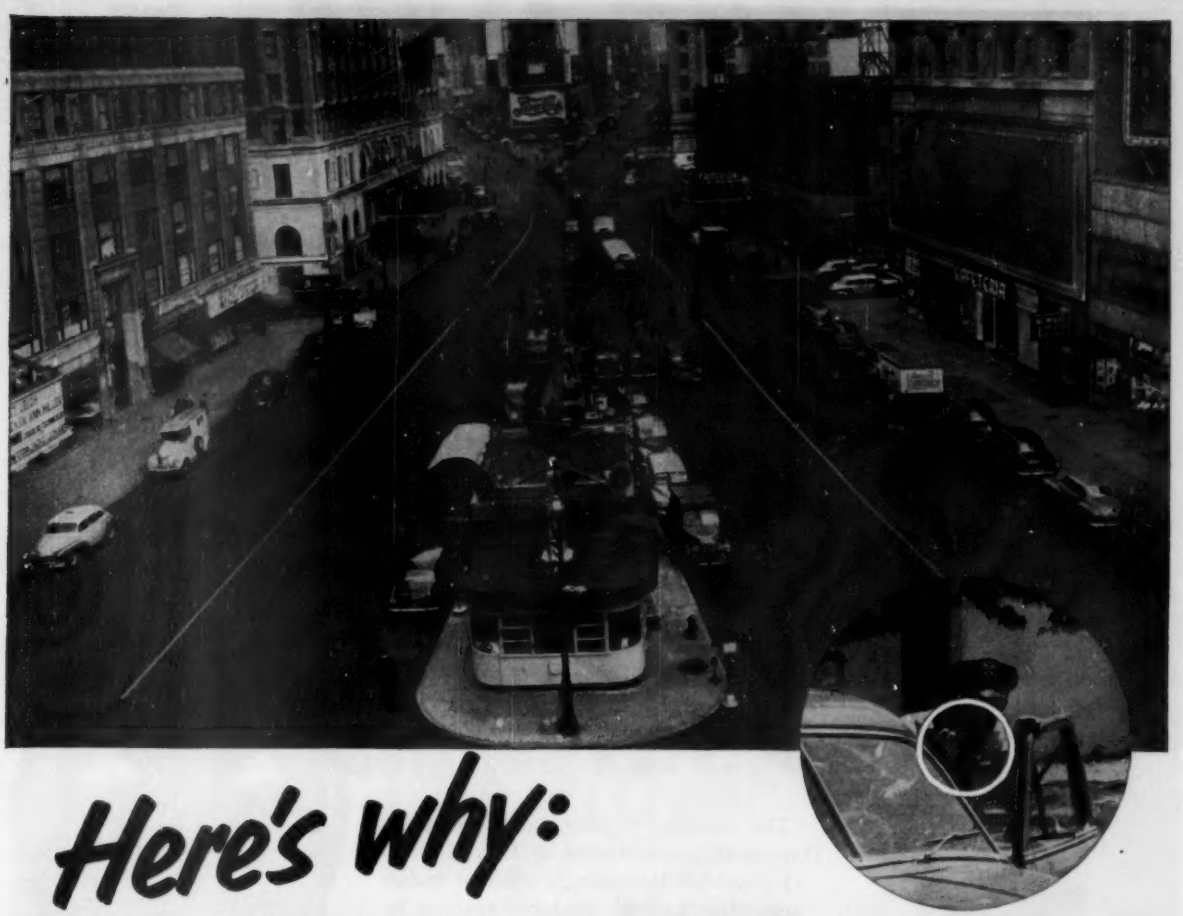
Basic inserting equipment makes it possible to insert valves in any existing line of corresponding size under pressure without loss of water.

Write for Catalog H-20 and H-602 today for complete details.

MUELLER CO.

Dependable Since 1857

2501 Chestnut St., Chattanooga, Tennessee



Here's why:

NEW YORK CITY RELIES ON A G-E COMMUNICATIONS SYSTEM!

"... entering the third year of operation now ... this equipment performs as well as when new."

"Every one of our 25 G-E 250-watt base station and 160 mobiles have delivered all the service we ever hoped to obtain."

"... have never had a maintenance problem. One installation located 130 miles from the city needs only a routine monthly check."

"For obvious reasons we are continuing to purchase G-E equipment in our expansion program."

Deputy Director of Communications, New York City

IN OPEN BIDDING for communications equipment to guard New York City's critical up-state watershed areas and to add backbone to their municipal defense efforts G-E won on all counts. G. E.'s promise of dependable performance in any emergency *and* its reputation for maintenance economy were outstanding. Today, those promises are facts thoroughly respected and appreciated by New York's officials.

Take note of these facts and the growing preference for G-E! Examine the communication element of *your* defense preparations. The CAS* man in a local General Electric office will help you evaluate its strength. Call him today, or mail the attached coupon!

**2-WAY MOBILE RADIO*Communications Advisory Service*

GENERAL ELECTRIC

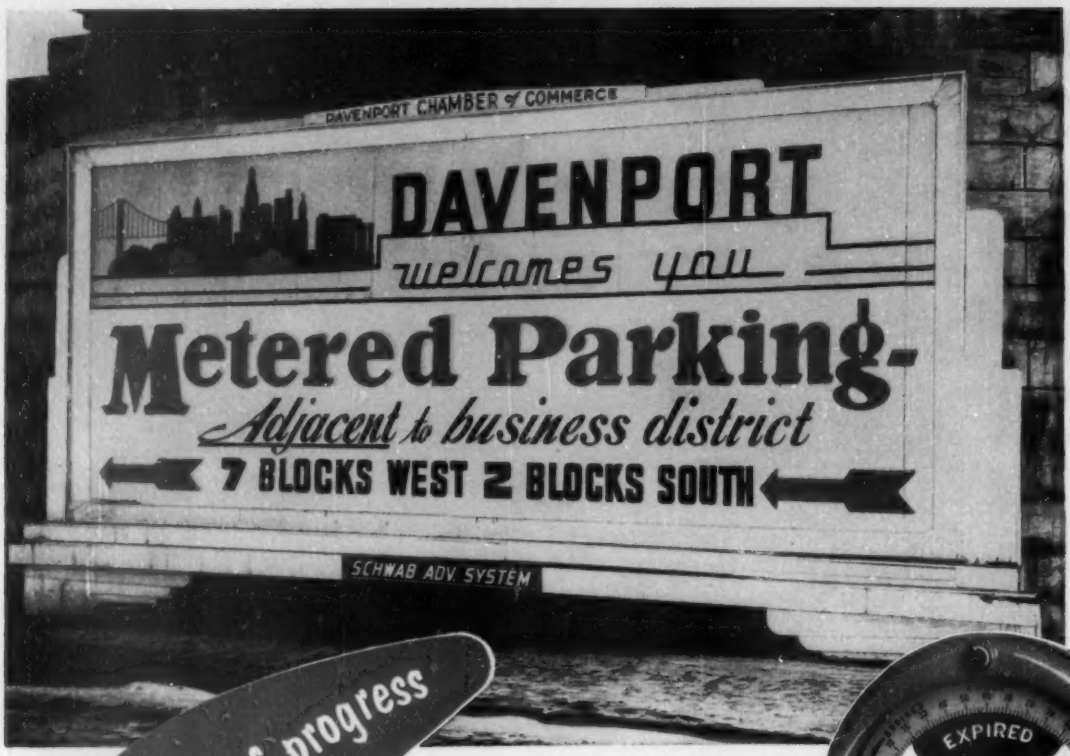
General Electric Company, Section X1024
Electronics Park, Syracuse, N. Y.

Please have a G-E CAS* man call with complete information on General Electric 2-way radio equipment for civil defense.

NAME.....

ADDRESS.....

CITY.....STATE.....



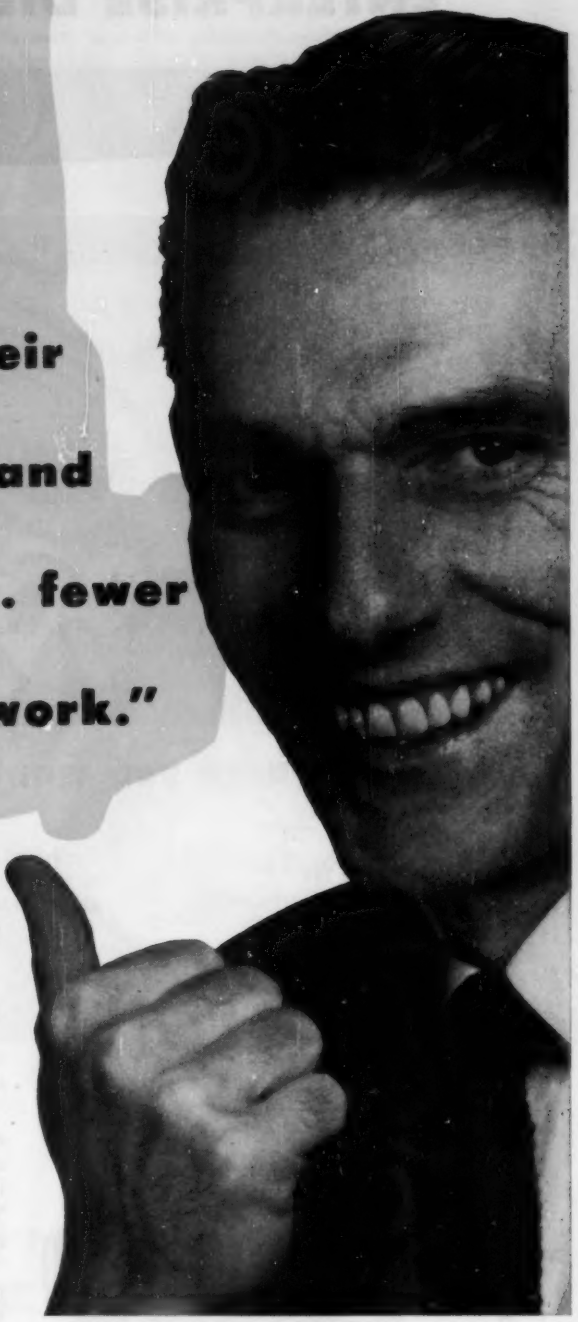
. . a sign of progress

The on-street parking meter system at Davenport, Iowa, started in 1949. It has, 1) provided increasingly efficient traffic regulation and, 2) produced revenue to develop metered parking lot facilities adjacent to the business district as shown below. What Davenport has accomplished with approximately 1,500 meters should be significant to progressive officials who contend with a parking problem.

Ask us to study your situation . . . no obligation

Magee-Hale
PARK-O-METER COMPANY
Commerce Exchange Bldg.
OKLAHOMA CITY 2, OKLAHOMA

"We use American Meters because of their simple design and quick servicing . . . fewer men handle the work."



"It costs money to keep a crew of meter repairmen. That's why we selected the water meters that were simplest in design and easiest to service . . .
AMERICAN METERS.

Even when AMERICAN METERS are frozen, we find no damage to anything but the frost bottom. All internal parts, including the gear train, have separated, avoiding ice damage. Breaking pressure of the replacement frost bottoms has been predetermined at the factory, so we don't need torque wrenches on the nuts. Yes, when we think of economy in water meters, we think of AMERICAN METERS."

• Write for complete information . . . today.

BUFFALO METER CO.

2902 Main Street Buffalo 14, N. Y.

ENTERPRISE DIESEL SERVICE...

Where you want it . . . when you want it

Check these points on Enterprise Diesel Service

- Service offices and parts warehouses strategically located for fast round-the-world service.
- Prompt processing and factory delivery on parts not normally stocked in local warehouses.
- Quick handling of all routine or emergency overhaul work.
- Expert supervision of any engine service constantly available by experienced ENTERPRISE Service Engineers.

ADD IT ALL UP and it pays to buy ENTERPRISE—backed by ENTERPRISE Specialized Service.

Enterprise customers get fast service and parts within hours

Wherever you are, ENTERPRISE service for marine and stationary diesel engines is just as near as your phone.

Usually within a few hours critical parts or service will reach you any place in the world from strategically located ENTERPRISE warehouses.

Whatever your requirements, whether for a simple replacement part or for complete specifications on a new diesel power plant, get in touch with your ENTERPRISE service office. You will find the people there friendly, competent and prompt.

Call the local office near you, telephone the San Francisco factory, or cable ENTERFOUND. Your needs will be immediately routed to the service point nearest you.

GENERAL METALS

Enterprise DEPENDABLE Diesels

ENTERPRISE ENGINE & MACHINERY CO.

18th & Florida Streets, San Francisco 10, California

A SUBSIDIARY OF GENERAL METALS CORPORATION

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DIESEL ENGINES • OIL BURNERS • PROCESS MACHINERY

Though Karparks have every worthwhile parking meter feature, it's the craftsmanship in their making that gets the approval of far-sighted officials. A long tradition of excellence in manufacturing timing mechanisms; advanced equipment; superb engineering; all these assure the precision, sturdiness and low maintenance costs that characterize a Karpark.

Modern methods make it better. After anodizing and spraying Karpark meter casings are carried on an endless conveyor through ultra-violet ovens where the color is baked on, to stay.

THE WISE CHOICE

The versatile

Twin-O-Matic

is on its way to cities everywhere

At last, the supply of materials allows increased production of this economical, dependable "two car" parking meter. Write for data.

KARPARK *Automatics*

THE KARPARK CORPORATION, CINCINNATI 6, OHIO
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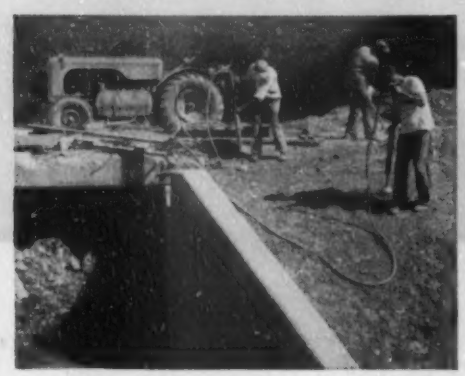
TWO GREAT
KARPARK
METERS
• Twin-O-Matic
• Unimatic

Karparks are manufactured by The Herschede Hall Clock Company *makers of America's finest clocks.*

Tamping — Here's a Le Roi-CLEVELAND back-fill tamper air-powered by Tractair, that gives you faster, easier tamping, better compaction, lower costs. This example shows how Tractair teams up with Le Roi-CLEVELAND Air Tools to save time, work, money.



Cutting asphalt pavement — with a Tractair-powered Le Roi-CLEVELAND paving breaker. Note, Tractair in background is equipped with a sweeping attachment. This is just another of many ways that Tractair can save you money.

Drilling trench — Easy holding Le Roi-CLEVELAND sinkers provide the fastest way of drilling rock. The air-power source is a Tractair, equipped with a front-end loader. Tractair is extremely mobile. It has a low center of gravity. It takes money-saving air power anywhere.

LE ROI TRACTAIR

...the 10 in 1 machine that does 10 basic jobs to save you money

It holds down your investment in special equipment

Because Tractair is a combination 35-hp wheel tractor and 105-cfm air compressor, it is extremely versatile.

It lets you take air power wherever you want it — air power for drilling rock, tamping fill, breaking concrete, driving spikes and form pins, or pumping water.

When it is equipped with attachments, you get added usefulness. You can load, back-fill, dig, sweep or hoist.

Although Tractair was pioneered and developed by Le Roi Company to do 10 basic jobs, its money-saving usefulness on costly, nuisance-type work is limited only by the user's imagination.

If you want to cut costs, get Tractair. Call your Le Roi dealer for a demonstration, or write us for further information.

LE ROI GIVES YOU MORE FOR YOUR MONEY

More Utility!
More Profits!

Loading — Tractair takes air power practically everywhere, yet it can be used for a wide variety of other jobs. Its front-end loading attachment, for example, has 8 accessories that interchange easily, so that Tractair can load, lift, back-fill, plow, etc.

Tractair with Mobildrill — Mobildrill is a lightweight wagon-drill attachment for Tractair. It gives you unusual mobility — one man can drill holes at any angle and any elevation up to 12 feet. Swinging boom permits drilling 4-6 holes of a pattern from one spot.

Compressors
Rock Drills
Tractair
Engines . . .

LE ROI COMPANY

Milwaukee 14, Wisconsin

A Subsidiary of Westinghouse Air Brake Co.

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WHEN YOU'RE BUILDING ROADS THAT CALL FOR

You'll be glad you bought

The operator can do normal ditching and grading, then high lift the blade to any desired bank-cutting position—including the vertical—without leaving the platform.

Heavily made and reinforced to accommodate the extra power of All-Wheel Drive and All-Wheel Steer, the Bulldozer is an essential for many jobs—a time- and money-saver for dozens of others.

Rugged Requirements *demand* Rugged Performance

ONLY AUSTIN-WESTERN GIVES YOU

that unbeatable combination
ALL-WHEEL DRIVE and ALL-WHEEL STEER

There is no doubt about it. Building and maintaining haul roads, access roads, and fire breaks—plus the many general maintenance jobs in the timber country—is rough, tough work, demanding rough tough machines for top performance, and with an Austin-Western Power Grader you get just that . . . get top performance on primary and secondary roads and highways of every type.

Every part is designed and built to the highest possible standards for long service and efficient heavy-duty performance, and Austin-Western Power Graders have been field tested for work capacity the world over on all types of jobs.

From its brawny, tough frame—with plenty of safety margin where extra strength is needed—to its positive, trouble-free hydraulic system—which does all of the work for you—your Austin-Western Power Grader has the proven stamina and ability to get the job done faster, and at lower over-all cost.

Austin-Western
Power Graders · Motor Sweepers
Road Rollers · Hydraulic Cranes

BALDWIN BLH LIMA-HAMILTON
Construction Equipment Division

Manufactured by
AUSTIN-WESTERN COMPANY
Subsidiary of Baldwin-Lima-Hamilton Corporation
AURORA, ILLINOIS, U.S.A.

EXTRA POWER AND EXTRA MANEUVERABILITY

an A-W Power Grader

Operator Herb Monroe standing beside an Austin-Western Master "99" Power Grader, one of several owned by the Dwyer Lumber Company of Portland, Oregon.

OPERATOR-APPROVED

"...It takes the combination of All-Wheel Drive and All-Wheel Steer to do the work I must do with a motor grader. With my Austin-Western Power Grader, I can work places and at times of the year when an ordinary motor grader would be practically helpless.

Precision Side-Shift also comes in mighty handy many times every day. Because of full hydraulic controls, all operations are easier and I am not exhausted after a full day's work."

Yours truly,

Herb Monroe

Herb Monroe

OWNER-APPROVED

"....About ten years ago we purchased the first Austin-Western Grader from the Columbia Equipment Company. Since that time we have bought two additional Austin-Western Power Graders. Because we have a great many narrow, crooked steep roads in our operations, we have found these graders excellent machines in construction and maintenance of these roads, and they are also outstanding in snow removal. We think the all-wheel drive and all-wheel steer gives added traction and makes it possible to put and hold the blade where you want to do the most work.

The powered front end and power steer are the outstanding features for our type of work and enables us to use these machines in mud, sand and snow removal.

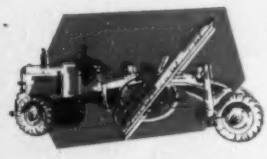
The maintenance cost on Austin-Western Graders has not been excessive. We believe the new heavier model Master 99, which we recently purchased, will be an exceptionally economical machine to use.

We heartily recommend these machines for any and all grader work."

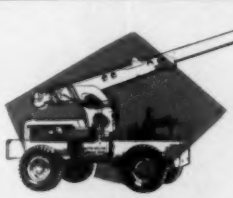
Yours very truly
DWYER LUMBER COMPANY

BY R.F. Dwyer

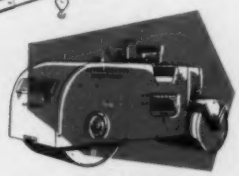
R. F. Dwyer, Pres.



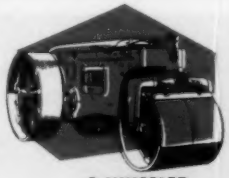
POWER GRADERS



HYDRAULIC CRANES



TANDEM ROLLERS

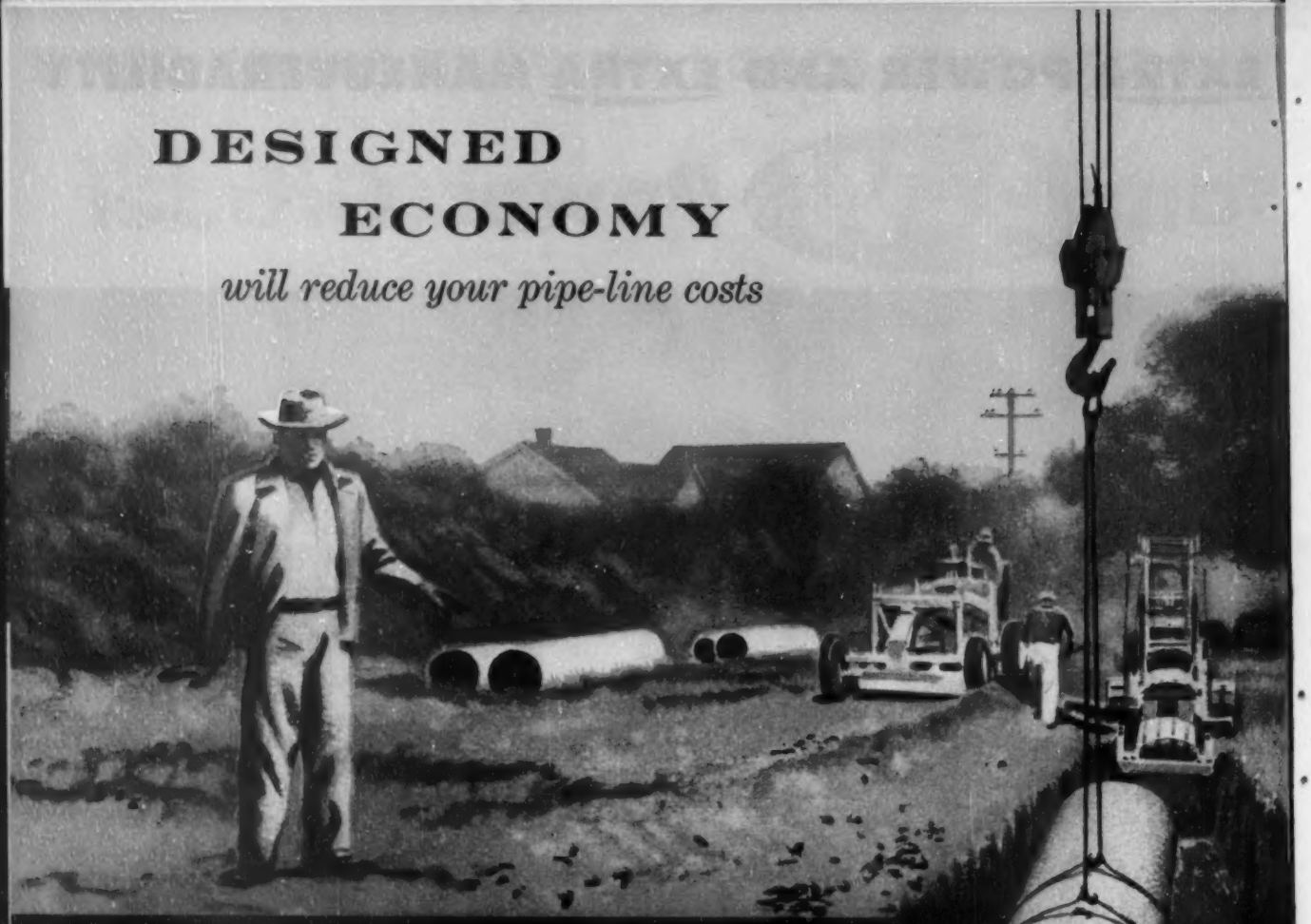


3-WHEELED ROLLERS

MOTOR SWEEPERS

DESIGNED ECONOMY

will reduce your pipe-line costs



Each of American's six classes of reinforced concrete pressure pipe is designed for the most efficient utilization of its steel components. Nearly half a century of design refinement, exhaustive testing and field experience has produced composite designs which are completely adequate for safe resistance to all internal stresses and external loading conditions.

In these designs *all* of the materials are working for you. The result is a better pipe-line per dollar of investment. In addition, quality materials and sound workmanship ensure sustained high performance and low maintenance costs in the future.

Our 45 years of specialized design and manufacturing experience in the water works field is at your service. Write or call for complete information.

American PIPE AND CONSTRUCTION CO.

P. O. Box 3428, Terminal Annex, Los Angeles 54
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Main Offices and Plant: 4635 Firestone Blvd., South Gate, California
District Sales Offices and Plants—Oakland • San Diego • Portland, Ore.
Concrete pipe for main water supply lines, storm and sanitary sewers, subaqueous pipe lines

ACT NOW!

rehabilitate your water system and give it new life with . . .

IOWA

MECHANICAL JOINT CUTTING-IN VALVES AND SLEEVES

Replace those "tired," worn-out valves . . . be prepared for all emergencies!

Now, more than ever, it's vital to keep your customers supplied with water and fire protection at all times . . . Replace worn-out valves and add needed valves with IOWA Mechanical Joint Cutting-In Valves and Sleeves . . . It's the fastest, simplest and most economical method of cutting gate valves into existing water lines . . . Furnished complete with joint accessories . . . No lead, no jute, no caulking . . . Just a ratchet wrench . . . Ideal as auxiliary valves for fire hydrants . . . Simplifies hydrant inspection and maintenance . . . Act now before it's too late . . . Write today for descriptive literature!

KEEP WORK CREWS BUSY ON JOBS LIKE THIS . . . IT PAYS!

IOWA VALVE COMPANY

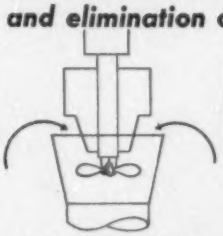
201-299 N. Talman Ave., Chicago 80, Ill. • *A Subsidiary of James B. Clow & Sons*

In Sludge Digestion... you need all 4!

Effective, two-stage, sewage sludge digestion involves far more than just a heated tank! There are four major — and interrelated — requirements.

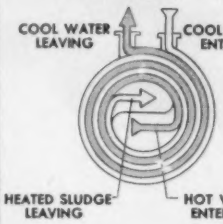
Here they are . . . and here's what you need to meet them . . .

1. Homogeneous mixing and elimination of scum



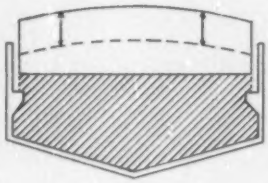
Calls for intensive mixing in the Primary by means of high-capacity propeller and draft tube.

2. Simplified Sludge Heating



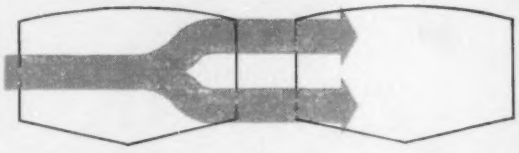
Requires an efficient heat exchanger of *simplified* design . . . without excessive and complex instrumentation.

3. Adequate Gas Storage



Demands a Secondary equipped with a movable, steel dome gas holder to even out fluctuations and insure a constant supply to gas utilization equipment.

4. Simplified Control



Requires a simple and automatic means of transferring sludge and liquor from the Primary to the Secondary at rate of feed.

Most important of all . . . you need a balanced and integrated System to meet these needs economically. Not an expensive conglomeration of unrelated units.

It will pay you to avoid the "piecemeal" approach. As proof, we suggest you compare the characteristics of Dorr Multdigestion* with any other digestion equipment.

*Reg. U.S. Pat. Off.

Better tools TODAY to meet tomorrow's demand

DORR

WORLD-WIDE RESEARCH • ENGINEERING • EQUIPMENT

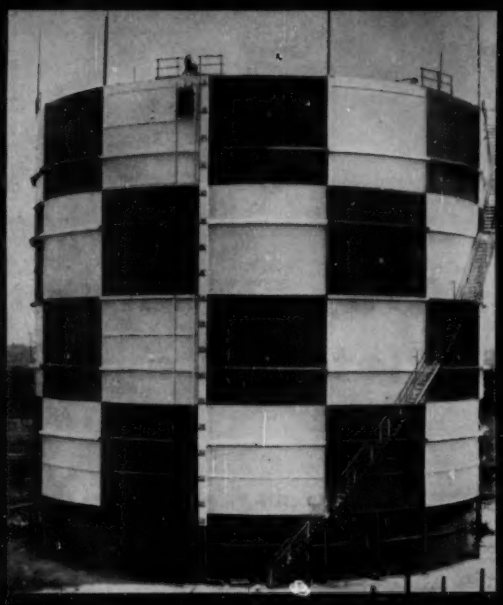
THE DORR COMPANY • ENGINEERS • STAMFORD, CONN.

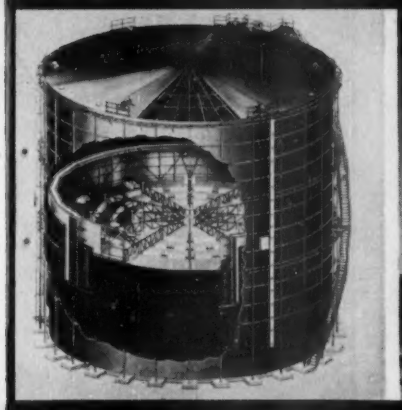
Offices, Associated Companies or Representatives in principal cities of the world.

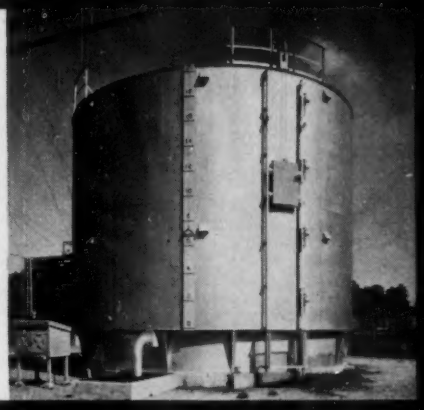
simple! proved in use!

Wiggins Gasholder

BY GENERAL AMERICAN





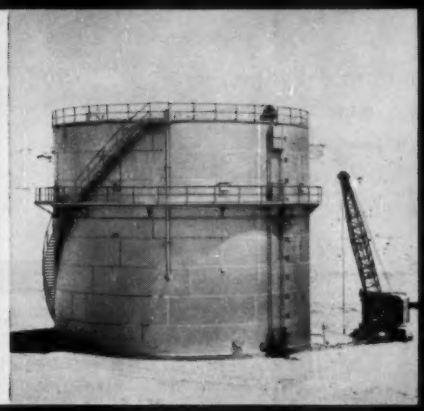


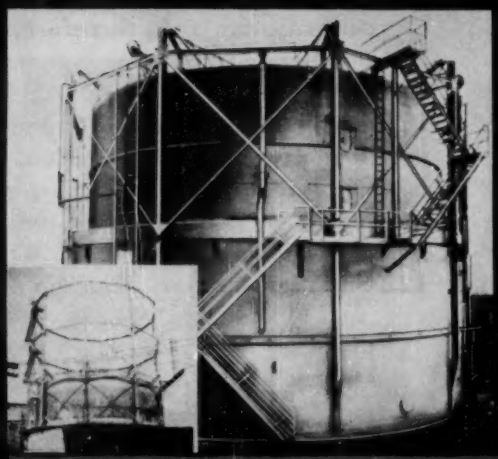
The only gasholder that uses

NO WATER
NO TAR
NO GREASE

The only gasholder that assures you

NO WEATHER WORRIES
NO OPERATING COSTS
NO MAINTENANCE PROBLEMS





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You can convert your old style gasholders to get the Wiggins advantages

Be sure to get the performance record on the only modern gasholder before you plan any gasholder construction.

Why research never says: "let well enough alone"

Anyone might fairly assume that cast iron pipe which has served, and is still serving, over 50 American cities for more than a century, is as efficient and economical as pressure pipe can possibly be. Our member Companies have not been content to rest on that assumption.

By continuous research and development, they have attained, in *modernized* cast iron pipe, greater toughness, strength and uniformity to a point resulting in still greater efficiency and economy.

***Modernized* cast iron pipe is centrifugally-cast. Where needed and specified, it is lined with cement mortar centrifugally applied, resulting in a tuberculation-proof pipe with sustained carrying capacity and, therefore, reduced friction loss and pumping costs.**

If you want the most efficient and economical pipe ever made for water distribution, your new mains will be laid with *modernized* cast iron pipe with either mechanical or bell-and-spigot joints. Cast Iron Pipe Research Association, Thos. F. Wolfe, Managing Director, 122 So. Michigan Ave., Chicago 3.

CAST Q IRON

The Q-Check stencilled on pipe is the Registered Service Mark of the Cast Iron Pipe Research Association.

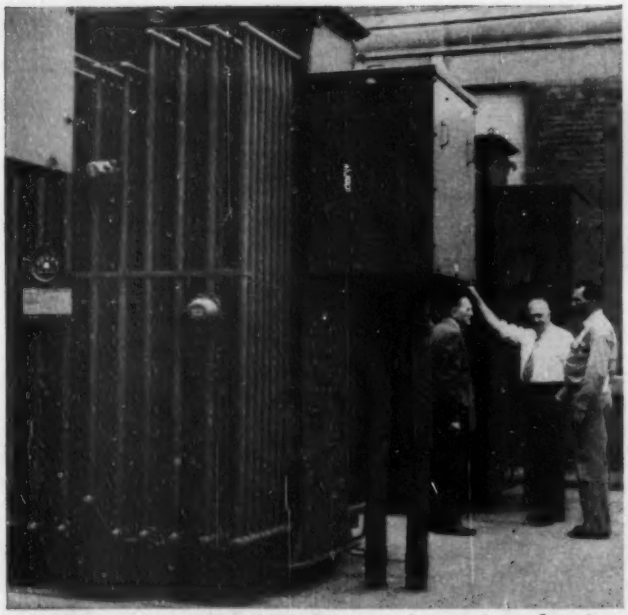
Modernized **cast iron**

This cast iron water main, uncovered for inspection, is in good condition after 100 years of service in Alexandria, Va.—one of more than 50 cities with century-old water or gas mains in service.

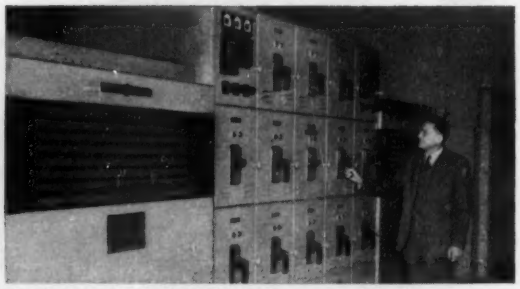
pipe for Modern Waterworks Operation

INCREASED WATER-PUMPING CAPACITY was recently provided at this fifty-year-old Bryant St. pumping station in Washington, D.C., with the help of G-E equipment. Station receives water at low pressure and elevates it to four distribution services. Main centrifugal pumps at right act as boosters in this operation. Operators' control room is shown behind pumps.

District of Columbia



RELIABLE OUTDOOR UNIT SUBSTATION steps down voltage for plant use to 2400 volts. G-E application engineers on this job worked closely with the consulting engineers, and with the Central Armature Works, electrical contractors.



SIMPLE OPERATION of this indoor unit substation can be provided by one man. Shown here are two G-E transformers supplying power for switchboard.

COMPLETE PROTECTION and control for pump motors is provided by this 2400-volt G-E metal-clad switchgear. In addition, these compact units provide circuit protection.

CENTRALIZED CONTROL of all plant operations can be provided by one man from this master control desk. Versatile SB-1 switches on panel are used to control pump motors and valves.

Easy-to-read switchboard instruments above window indicate station electrical values. The entire twenty-two foot long desk is housed in a single enclosure.

expands water system

New G-E equipment at Bryant St. Station helps to *more than double* pumping capacity

In order to handle rapidly growing water requirements in the District of Columbia, a new modernization and expansion program was recently placed in operation at the Bryant St. Station. As a result, the station's water-pumping capacity has been boosted from 145 mgd to 310 mgd, providing increased capacity for Washington's growing needs.

Instrumental in the success of this expansion program was General Electric equipment and engineering assistance. To help provide a co-ordinated electrical system designed for this particular installation at minimum cost, G-E application engineers worked in close co-operation with the city's consultants.

This same kind of help can pay off for *your* community's water supply program, too. G-E application engineers are ready to work closely with you and your consultants to fit the right electrical equipment into a system tailored to your particular needs. Call in your G-E apparatus sales engineer *early in your planning stages,* where he can help you the most.

SHOW YOUR COMMUNITY THE IMPORTANCE OF ABUNDANT WATER

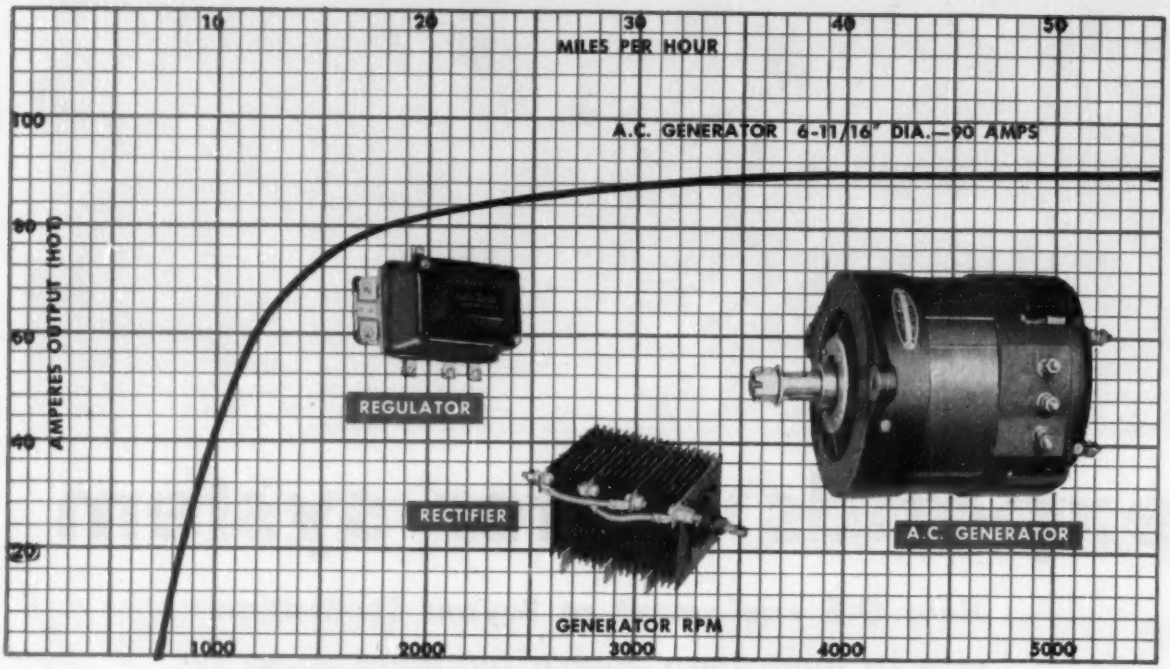
Stimulate interest for a water supply program by showing the new color movie "Pipeline to the Clouds." It's part of G.E.'s *More Power to America* Water Supply Program. For full information contact your local G-E Apparatus Sales Office or write on your letterhead for Bulletin GEA-5555 to General Electric Co., Apparatus Sales Div., Sect., 666-80, Schenectady, N. Y.

Engineered Electrical Systems for Waterworks

GENERAL ELECTRIC

Power Packed and

HERE'S THE A.C. ANSWER TO EXTRA-HEAVY ELECTRICAL DEMANDS



DELCO-REMY

A. C. Generator, Regulator and Rectifier

Here's the answer for "problem" vehicles—Delco-Remy's new long-lived A.C.-D.C. charging system! It's specifically designed to meet the *extra*-heavy electrical demands of public utility trucks and other vehicles equipped with two-way radio, floodlights or any extra electrical units . . . ample current reserve picks up discharged battery quickly in operation. Delco-Remy A.C. generators are suitable for use at all engine speeds.

With output ranging from 30-40 amperes at curb idle and up to 90 amperes at higher engine speeds, the new Delco-Remy A.C.-D.C. charging system meets all electrical needs under the toughest operating conditions. Included in the new system is the A.C. generator, a matching regulator, and a rugged, dependable dry-plate rectifier which converts generator A.C. output to direct current.

Application packages complete with installation instruction sheets for popular makes of cars and trucks are now available. The conversion job is simple. For further details and application data, see your nearest United Motors distributor.

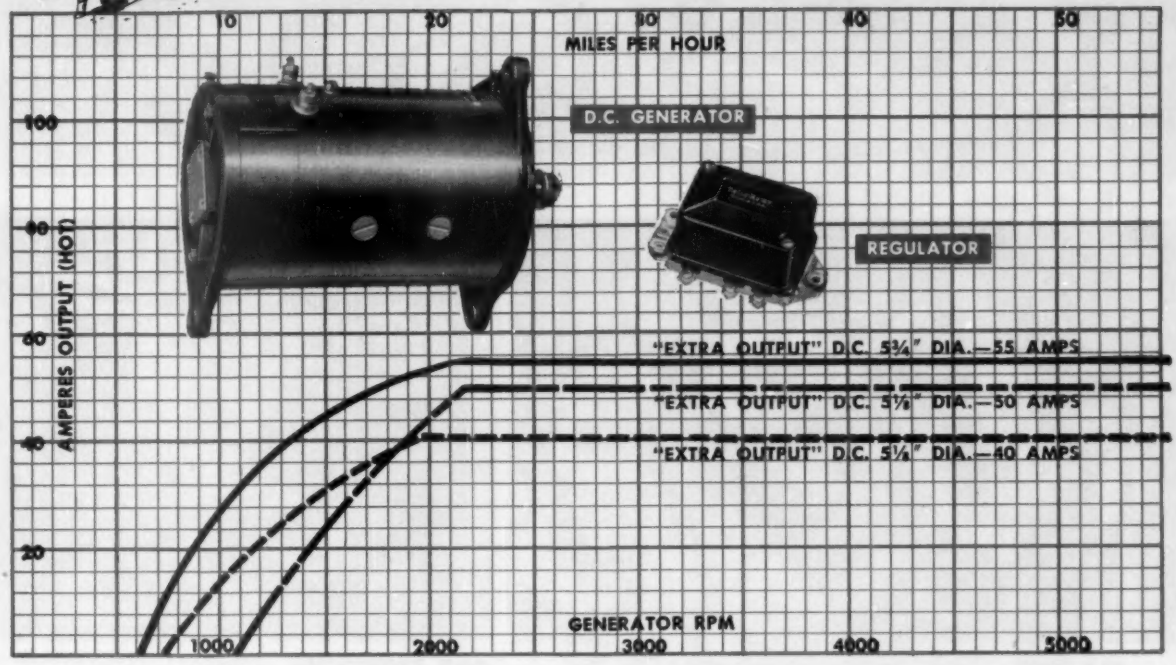
A GENERAL MOTORS PRODUCT — A UNITED MOTORS LINE

DISTRIBUTED BY WHOLESALERS EVERYWHERE

WHEREVER WHEELS TURN OR PROPELLERS SPIN

Right for the Job

HERE'S THE D.C. ANSWER TO HEAVY ELECTRICAL DEMANDS



DELCO-REMY

Extra-Output D. C. Generators and Matching Regulators

Delco-Remy extra-output D.C. generators are an economical answer to the electrical needs of public utility pickup or panel trucks as well as other vehicles with additional lights, two-way radios, or other special electrical equipment in medium to heavy-duty service. Delco-Remy extra-output D.C. generators are low in cost, simple to install, economical to maintain.

DELCO-REMY 40-AMP GENERATOR has low cut-in, about 7 mph, charges from 11 to 17 amperes at curb idle . . . full output about 18 mph —for vehicles customarily used in heavy traffic.

DELCO-REMY 50-AMP GENERATOR has slightly higher cut-in, about 11 mph . . . full output about 21 mph—for vehicles customarily operated at higher speeds, with minimum slow driving.

DELCO-REMY 55-AMP GENERATOR has very low cut-in, about 6 mph; charges at curb idle from 20 to 30 amperes . . . attains full output at 20 to 25 mph—for vehicles customarily operated at low speeds with added electrical loads, such as city taxicabs and police cars.

For further details and application data, see your nearest United Motors distributor.

Delco-Remy

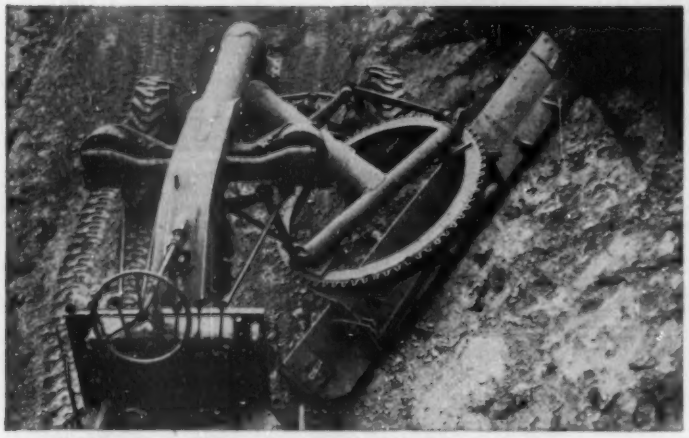
DIVISION, GENERAL MOTORS CORPORATION, ANDERSON, INDIANA

WHEREVER WHEELS TURN OR PROPELLERS SPIN

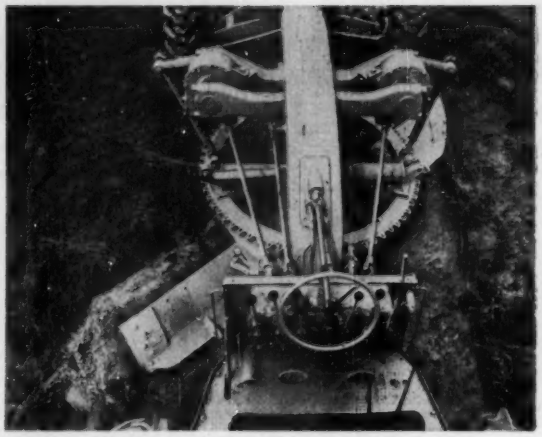
ALLIS-CHALMERS INVITES YOU TO . . .

Look at Your Grader Jobs

THROUGH THE EYES OF AN **AD-40** OPERATOR . . .

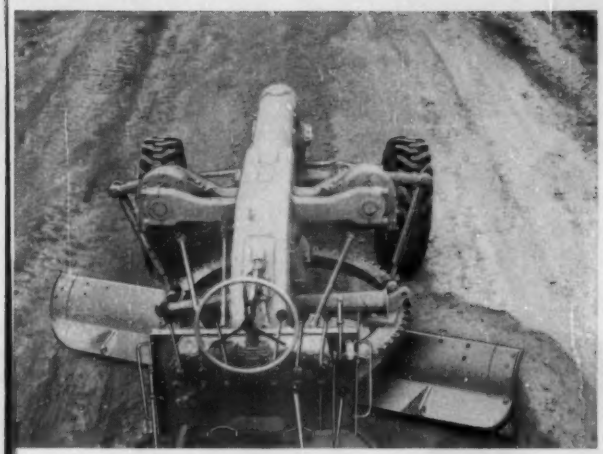


SLOPING— Look how much better you see . . . how much steadier your blade is with small control rods leading out to lift cases located directly over the circle.

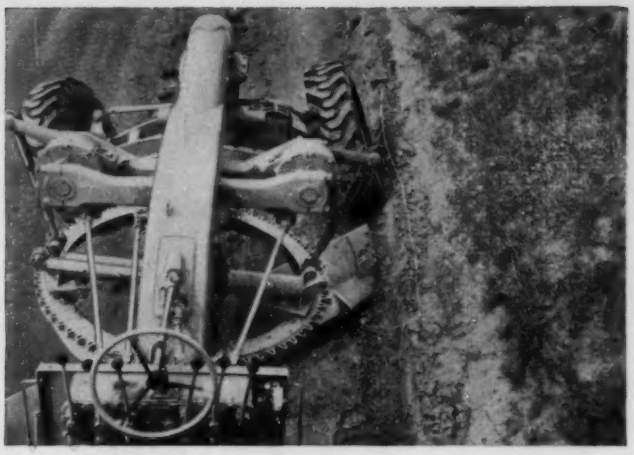


SOD STRIPPING — Look at the tapered corners on this clean, wide platform . . . how they give unequalled view of heel of ROLL-AWAY moldboard.

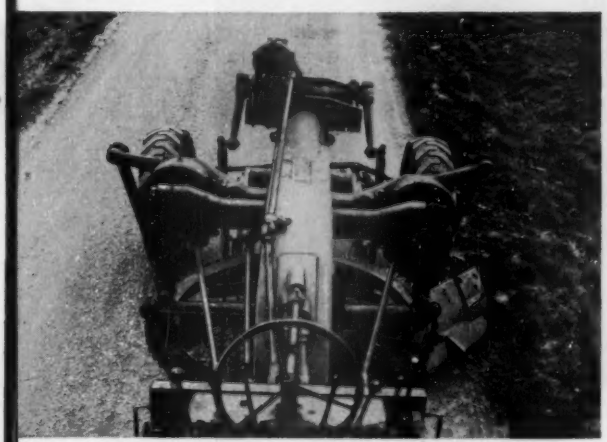
In addition to letting you see better, the AD-40 offers feather-touch hydraulic power steering, hydraulic brakes . . . and true comfort for any size operator, sitting or standing. *Look!*



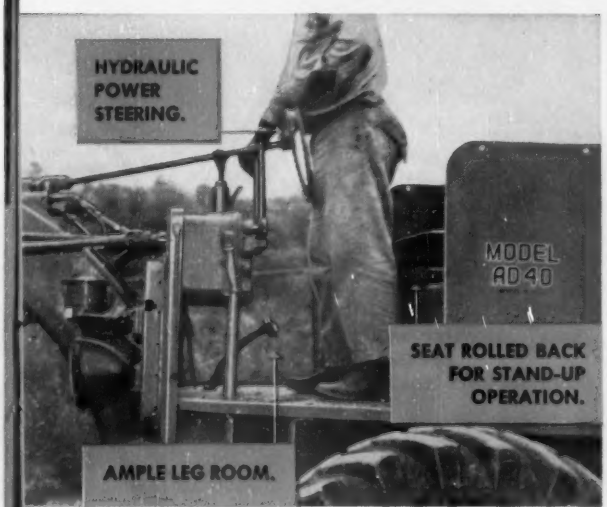
GRADING — Look at that single member frame — it really lets you see what you're doing . . . means efficient grading on *any* job.



DITCHING — Look at the low control panel. It gives you a clear view of the blade . . . helps insure a clean, smooth ditch.



SCARIFYING — Look at the AD-40, even in scarifying, and you will see it means new, better grader visibility at all times.



• 104 bhp. • Six speeds forward, three reverse • 23,000 lb. (with optional calcium chloride solution in rear tires — 24,800 lb.).

YES, the big, new AD-40 is designed for today's jobs and today's operators . . . brings new standards of performance to all users of motor graders . . . handles all grading jobs faster, better, easier. You owe it to your operators . . . and yourself to ask your nearby Allis-Chalmers dealer now for a demonstration and *see for yourself.*

ROLL-AWAY is an Allis-Chalmers trademark.

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They're built to hold their accuracy longer, so that you are paid for as much as possible of the water you pump.

Built to be easier to repair, so that your shop time and expenses are cut down.

They're designed so that the newest parts fit the oldest meters . . . simplifying your repair parts problems, helping you to get modern performance from your oldest meters.

And they're built to *last*. Tridents as old as 50 years are still in service. The Tridents you buy today will be a credit to your water system for many long years to come.

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Flat-Rate Sewer Service Charges

A review of charges various cities make and a description of the type of sewerage system each supports

ALTHOUGH ALL CITIES aim for the ideal in municipal practice, many cities have to settle for "next best." Most agree that the best practice, when sewer-service charges have to be made, is one based on the volume of sewage contributed. The charge may need adjustment, in case of industrial wastes, for unusual strengths of the contributed waste. Nevertheless, virtually everyone agrees that the ideal, theoretically, is a rate based on the metered water reading.

However, the best theoretically often is not the best practically. Often the "next best," theoretically, serves the city better.

The next best sewer-service charge is a flat rate of some type that roughly provides a charge proportional to the use made of the system. A city often has to settle for this method when it doesn't have available the metered charges used for water supply.

In some places, the city doesn't use water meters; in others, a private company may sell the water and can be understandably reluctant to release its private transactions with its customers for the purpose of making other charges against them.

In these cases, the city officials have to prepare the flat-rate charges. Generally, these officials are laymen. They insist that the charges must be simple enough for them to comprehend, easy to apply, and fair enough to be palatable to the people in their respective communities. The fact that the charges may not be logical to the expert, or easily correlated between cities, is a matter that does not concern the officials.

However, the experts—be they sanitary engineers, financial advisers, or others—have a fundamental concern with these charges and may be able to trace patterns upon re-examination of the problem that initial studies do not disclose. This report, therefore, lists and comments on some of the flat-rate charges used by municipalities.

Puyallup, Wash.

Puyallup, population 10,000, is a city that has no sewage-treatment plant. Nevertheless, it makes a healthy charge for the use of its sewers. These charges are assessed against the new portion of the system only and meet the cost of principal and interest on revenue bonds as well as maintenance. The charges include:

Service Charges Per Month

Domestic	$2.50
Churches, business offices, other light water users	1.25
Stores, barbers, beauty parlors	2.50
Cafes, taverns, theaters, filling stations	5.00
Apartments, other multiple residences, billed as one connection for each 4 units	2.50
each additional unit	1.25
Hotels, motels, hospitals, schools, fee per room or rental unit	1.25

(*Continued on page* 84)

These charges are assessed against those served by the sewers only. The revenue pays for 50% of the bond and interest cost as well as for maintenance. The balance comes from the water fund which is combined with the sewer department.

Chehalis, Wash.

Chehalis, population 5,600, receives a sewage with an abnormally high industrial load, which is treated in a plant equipped with high-rate, trickling filters. Yet the service charges do not reflect the load imposed by the industrial waste. The charges are straightforward and simple:

Service Charges Per Month

Domestic, single-family dwelling	$1.35
Apartment house	
fee for first unit	1.35
fee for each additional unit	.40
Industrial and commercial	1.35
an additional fee of 50% of monthly water bill.	

Vancouver, Wash.

Vancouver, with a population of 42,000, is the largest city in the State of Washington to use flat-rate charges. The fees support a plant that provides only primary treatment. The charges include:

Service Charges Per Month

Residences	$ .50
Apartments, cabins, trailers, motels, per unit	.50
Bakeries, churches	.50
Gasoline service stations	.50
with wash rack	1.00
Stores, business houses, banks, dry cleaners, duplex, garages, guest homes, rest homes, tourist homes	1.00
Industrial and manufacturing establishments	
100 employees or less	1.00
over 100 employees	2.00
Office buildings	
10 rooms or less	1.00
fee for each additional room	.10
Garage with wash rack	1.50
Hotels	
10 rooms or less	1.50
fee for each additional room	.10
Bus depots, railroad stations, cafes, taverns, restaurants, court apartments, laundry, lodges	2.00
Schools and public institutions	3.00
Clubs and clubrooms, creameries	5.00
Canneries	10.00
additional fee per 1,000 cu. ft. of water consumed	.08
Hospitals	10.00
Barnes Hospital	25.00

Renton, Wash.

Renton, population 16,000, is the state's second largest city using flat-rate sewer charges. Roughly, these rates are about 50% higher than those charged at Vancouver. However, the city supports a high-rate, trickling-filter plant. These charges include:

Service Charges Per Month

Residence, apartment, or dwelling unit	$ .75
Rooming houses	.75
additional fee for each rented room	1.15
Service stations, garages, post office	1.00
Hotels	
10 rooms or less	1.50
fee for each additional room	.15
Beer taverns, medical clinics, markets with refrigeration, mortuary, baths, and theaters	1.50
Creameries	2.00
Ice plants, bus depots, cold storage lockers	2.50
Army barracks	3.00
Hospitals	
50 beds or less	5.00
over 50 beds	10.00
Winery	5.00
Laundries	10.00
Restaurants, depending upon number of seats	.75–2.75
Schools, per 100 students and teachers	2.50
Industrial plants, per 100 workers	2.50
Trailer camps	
up to 25 trailers	7.50
over 25 trailers	15.00

Sunnyside, Wash.

Sunnyside, Wash., population 4,200, uses a service-charge arrangement that would make most experts shudder. Yet the method is so logical and fair that it commands admiration. This little city has divided its area into zones. Zone 1 is the area embraced by the original local improvement district that voted to tax itself for sewers. Zone 2, or the balance of the city, has financed its sewers by the sale of revenue bonds financed by service charges listed below. A third rate exists for outlying users of the service.

The service charges pay for the sewers and also for a high-rate treatment plant that treats a strong industrial load. The charges made to water users outside the city include $3.00 per month for each residence, and $6.00 monthly for duplex dwellings. Other charges include:

Service Charges Per Month

	Zone 1	*Zone 2*
Residence	$ 1.00	$2.50
Duplex dwelling	2.00	5.00
Apartments, per unit	1.00	2.50
Hotel	5.00	12.50
Tourist camp	2.00	3.50
additional fee, per cabin	.....	.30
Schools, when in use	20.00	50.00
Office buildings, per office	1.00	.....
Businesses	2.00	5.00
Commercial rates, based on water consumption		
minimum charge	2.00	5.00
50,000 to 1,000,000 gallons	1.00	.....
each 1,000,000 gallons thereafter	10.00	.....

Sunnyside also gets some revenue to support its sewerage system from its garbage collection, also on a service-charge basis. The garbage-collection activities have been combined with the sewer department, but the actual collection is made by an independent contractor. The city receives 35% of the gross collections which is transferred to the retirement of bonds.

Pasco, Wash.

Pasco, a city of 10,000, has no sewage-treatment plant. Nevertheless, this did not deter these practical city officials from establishing service charges. Each family pays $1.00 per month, and all users of more than 500 cubic feet of water pay an additional charge of 3 cents per 100 cubic feet.

Kennewick, Wash.

Kennewick, another city of 10,000, supports a primary treatment by a rather stiff set of flat-rate charges. These run as follows:

Service Charges Per Month

Single-family residence	$ 2.00
Apartment houses, rooming houses, taverns, hospitals, cleaning plants	5.00

Trailer or cabin camps	
under 5 units	3.00
under 20 units	5.00
under 100 units	10.00
over 100 units	20.00
Post office, service stations, garage, medical clinics, grocery stores and markets, ice plants	3.00
Creameries, laundries	10.00
Bus depots	
under 20 seats	5.00
under 50 seats	10.00
over 50 seats	20.00
Hotels	
under 100 rooms	5.00–10.00
over 100 rooms	20.00
Canneries, food-processing plants, grape juice plant	20.00
Restaurants	
under 50 seats	5.00–10.00
over 50 seats	20.00
Schools, per 1,000 students and teachers	5.00
during vacation	2.00
Businesses not specified	2.00
Industrial plants not specified, per 100 workers	5.00

Other Washington Communities

Wapto, with 3,200 people, charges single-family residences 50 cents per month, duplex residences $1.00, and all other users 50 cents per toilet to help finance a primary-treatment plant.

Some of these little Washington communities have no fear of making stiff charges. Okanogan, population 2,000, finances part of a high-rate, trickling filter plant by charging residences $3.00 per month, apartments $2.50 per unit, the hotel 50 cents per room, garages $5.00 per month, restaurants $5.00 per month, service stations, taverns and theaters $7.50.

Union Gap, population 1,750, finances a high-rate, trickling-filter plant by charging residences $3.00 per month, and apartment houses, tourist camps and hotels, and other types of business $5.00 per month.

Deer Park, population 1,200, with a primary-treatment plant, arrived at the interesting figure of $2.85 per residence per month with appropriate charges for a long list of other types of sewer users.

Little Almira, population 400, supporting a high-rate trickling-filter plant, charges residences $3.50 per month, apartments $3.50 per unit, the school $65.50 per month, the hotel $67.50. Other miscellaneous charges range from $4.50 to $9.00.

Even smaller Fairfield, population 370, using only a septic tank, still charges its residences $2.00 per month, and commercial houses $3.00 per month.

Traverse City, Mich.

In the State of Michigan, relatively few cities use the flat rates. However, Traverse City, population 17,000, is one that does use this charge. This city has a primary-treatment plant and chlorinates the effluent. About 75% of the treatment costs are paid by these charges. The income is also applied to the retirement of bonds, operation of the plants, and maintenance of the system. Its rates are as follows:

Service Charges Per Month

Residential	
single-family dwellings	$ .75
two-family dwellings	1.15
Commercial and industrial (per 1,000 cu. ft.) minimum charge	1.15
Hotels, rooming houses, tourist homes and cabins, and multiple dwellings	
first 2,000 cu. ft.	.63
next 2,000 cu. ft.	.55
balance	.40

Those commercial establishments discharging large quantities of water containing no sewage, industrial waste, pollution or objectionable matter may apply for a special commercial rate which the city manager may apply at his discretion. This rate shall not be less than one-fourth of the commercial and industrial rate.

The city will not honor deductions from any sewage-treatment account for water used which does not reach the sanitary sewer, unless the water is taken from a separate metered connection, with the water-supply main. The expense of such a connection must be borne by the user in the same manner as are other water-supply connections.

The services are billed at net and gross rates, the gross rate being 5% higher than the above net rates. The difference between the gross and the net amounts will constitute a discount if bills are paid in full on or before the due date thereon.

The city makes a 5% penalty charge for bills not paid on or before the date due.

Buchanan, Mich., with a population of 5,250, has an activated sludge plant. It also uses flat-rate service charges, earmarked for the operation of the plant and the maintenance of the sewer. They provide income for about half of these costs. These charges amount to $3.00 per year per house or apartment; $10.00 per year for garages with wash racks, creameries and small hotels; $25 per year for most industrial firms, and $100.00 per year for one of the firms.

Tennessee

In the State of Tennessee, sewer service charges in use do not reflect anything but an attempt to help finance the sewerage program. According to a study made by the Tennessee State Planning Commission, "1950-51 Sanitary Service Charges," the municipalities of Tennessee still rely heavily on the *ad valorem* property tax to finance these improvements.

Lawrenceburg, population 5,500, operates a primary-treatment plant, using Imhoff tanks. It makes a simple charge of $1.75 monthly to residential, industrial, and commercial users to help finance this plant.

Mount Pleasant, Tenn.

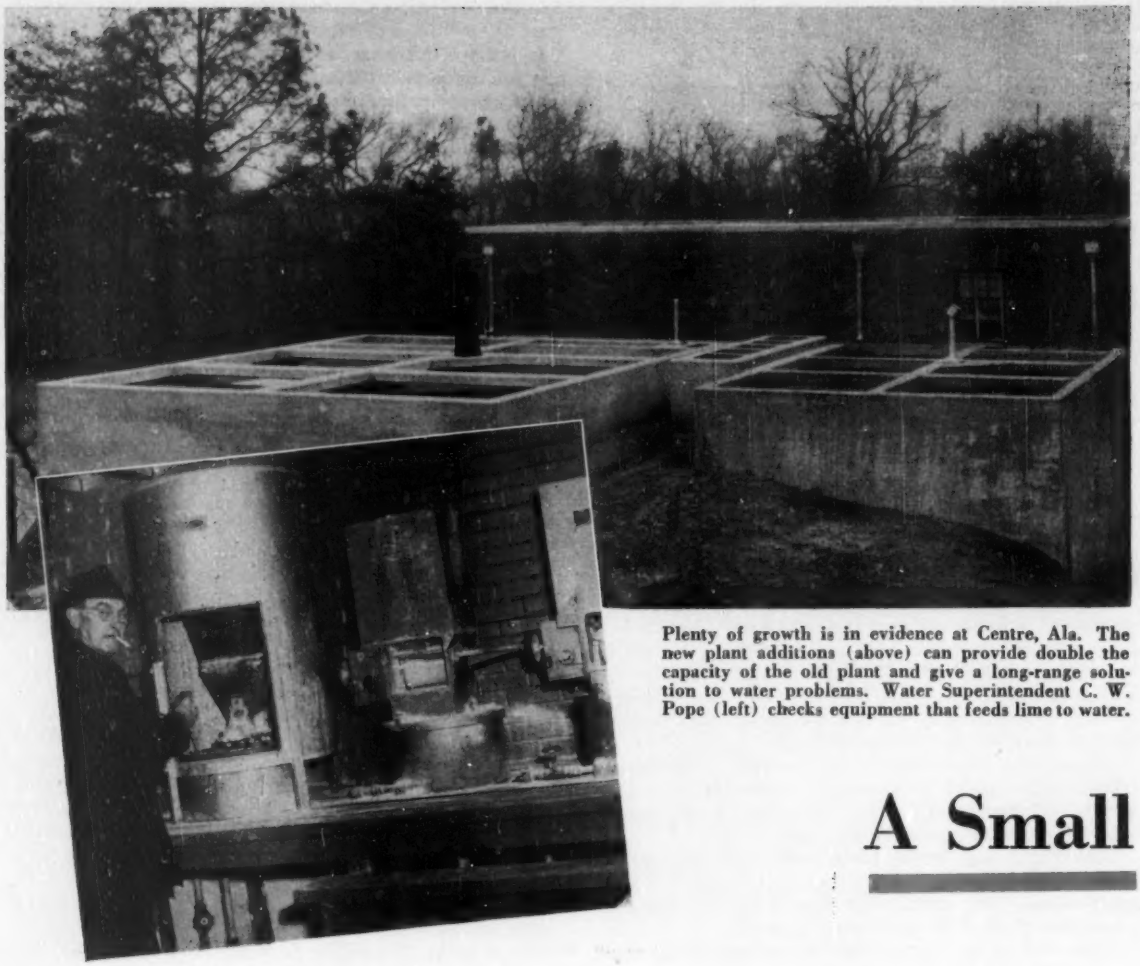
Mount Pleasant, population 3,000, operates a trickling-filter plant. Its sewer-service charges are on a flat-rate basis as follows:

Service Charges Per Month

Residential	
Homes	$1.50
Apartment house	1.50
fee for each additional unit	.50
Duplex, per unit	1.50
Commercial	
Soda fountains	2.00
Restaurants	2.50
Factories, schools, etc.	5.00
Retail stores, offices, etc.	1.50

Summary

In the states mentioned, the study disclosed a total of 17 cities using metered water rates, as compared with 16 that charge flat rates. In Washington, the score was eight cities that use metered charges, compared with 12 using flat rates. In Michigan, seven cities use metered rates; two, unmetered. In Tennessee, two cities use metered charges; two, unmetered. Of significance, however, is the fact that none of the Pennsylvania municipalities use flat-rate charges.



Plenty of growth is in evidence at Centre, Ala. The new plant additions (above) can provide double the capacity of the old plant and give a long-range solution to water problems. Water Superintendent C. W. Pope (left) checks equipment that feeds lime to water.

A Small

JUDGED by the number of people who live there, Centre, Ala., would be considered a small town. The 1950 census recorded a population of only 1,672 people; and the town is not even served by a railroad. But, by 1980, it anticipates a population of 4,500, and its water department is prepared to meet the demand.

Economic Aspects

Size has never been a trustworthy measure of a community's thrift or progressive character. And with today's motor-truck transportation, the lack of rail facilities is no longer a threat to growth. The town is located in one of the most fertile farming regions of northern Alabama and is supported by farmer trade. In addition, it houses a fabric factory, hosiery mill, and shirt factory. Since the 1950 census, the town has already grown to more than 2,000 population. Therefore, its confidence in preparing for its future growth is well founded.

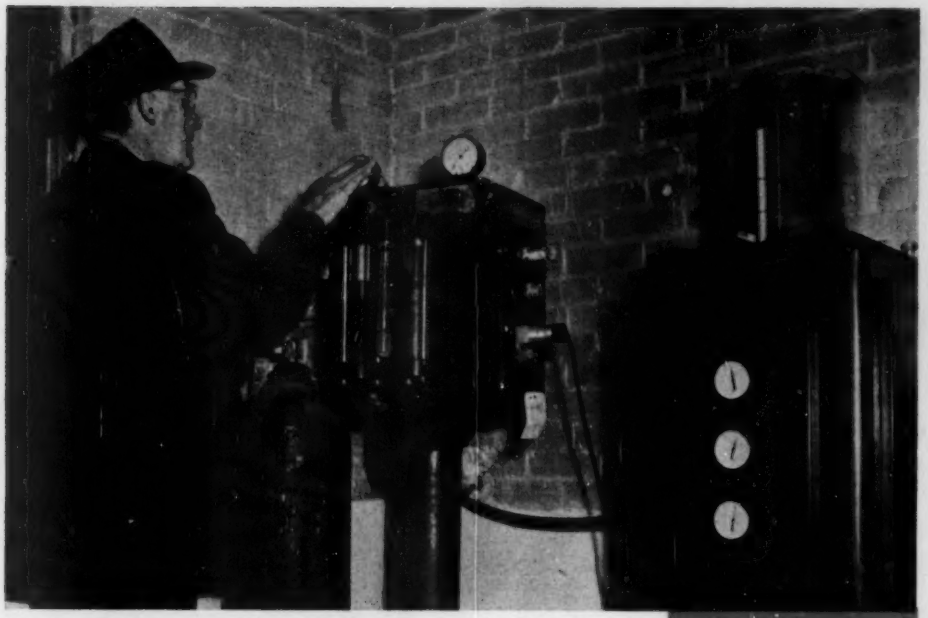
Outgrown System

In 1950, the water plant had to work around the clock to meet ordinary demands for water, leaving little margin for fire demand with the existing treatment facilities. It was obvious that the plant had to be enlarged.

The outgrown system, around which improvements were made, consists of a raw-water intake that draws water from the Coosa River. An 8-inch, cast-iron main runs from the intake for 150 feet to the raw-water well which is located under the filter building. The well is 5 feet square and 46.6 feet deep, constructed of reinforced concrete. Two Fairbanks-Morse vertical turbine pumps deliver water from this well to the mixing chamber. Both pumps are rated at 120 gpm (gallons per minute). Old mixing chambers, which have now been replaced, were located at one end of the settling basins. At the 70-gpm rated capacity of the filter, the mixing chambers provided a detention period of 14 minutes with a velocity of 1.78 feet per minute through the 4-inch connecting ells.

The enlarged settling basin is 16 feet wide and nearly 22 feet long and provides a detention period of six hours at an average velocity of 0.106 feet per minute. The water then proceeds to a rapid sand filter with an area of 35 square feet. At the conventional rate of 2 gpm per square foot of sand area, the filter has a nominal capacity of 70 gpm. One 15-hp Fairbanks-Morse centrifugal pump supplied water.

A clear well of 8,000 gallons ca-



Mr. Pope makes a minor adjustment in order to regulate chlorine feeding at an efficient rate. Note the difference in design between the old chlorinator, which is at the left, and the new one, at the right.

Water Works Gets Set for 1980

Centre, Ala., aims at the future by adding 200% capacity to its water-treatment plant

pacity receives the filtered water. The delivery of water to the distribution system was limited to a pair of pumps, one having a capacity of 70 and another of 100 gpm, against a total head of 225 feet. The distribution system is built of cast-iron pipe and has 34 fire hydrants, distributed at the rate of four or five hydrants per mile of main.

Plan for Improvements

The obvious way to enlarge the plant was to add to the existing facilities. The Coosa River, although very muddy during most of the year, provides a water that is soft enough to prevent major problems and has an alkalinity that can be controlled by the addition of lime through a pair of Wallace & Tiernan dry chemical feeders.

A study of population figures suggested that Centre would grow at the rate of 83 people per year. Therefore, the engineers designed the enlargement so that the entire plant would provide 210 gpm, thus aiming to meet the 1980 demand.

The reconstruction utilized the old plant as much as possible. Two new Fairbanks-Morse turbine pumps were mounted over the existing raw-water well. Each pump can deliver 210 gpm.

The mixing chamber had to be abandoned to make way for a chamber large enough to accommodate the increased capacity. Part of the flow from the mixing chamber goes to the existing settling basin, and part to the new basin. The new basin has a detention period of six hours at an average velocity of 0.14 feet per minute. The settled water proceeds to two new filters that are constructed along the same lines as the existing unit. A new filter building addition had to be constructed in order to accommodate new units.

The improvements incorporate a new clear well with a capacity of 23,900 gallons. This operates in conjunction with the old reservoir. Two new Fairbanks-Morse turbine service pumps have been installed to deliver the water to the distribution system.

A pair of Wallace & Tiernan chlorinators can supply chlorine, either at the beginning or end of the treatment.

Operation of Plant

The plant operates under the administration of the Water Works and Sewer Board composed of Chairman Hugh I. Blair, C. R. Camp, and J. R. Nutt. C. W. Pope is superintendent. Mrs. F. Chambless is treasurer. The current improvements were designed by Troy E. Watford, consulting engineer of Gadsden, Ala.

A "Temporary" Street

First step—a LeTourneau scraper picks off the irregular, high spots in the finished subgrade.

Then comes the laying of the clay-stabilized base. We have found that the more carefully this base is laid, the more successful the treatment will be.

By EDWARD J. BOOTH
City Engineer
Bismarck, N. D.

TO DISTINGUISH "temporary" from "permanent" is a problem that bedevils most engineers. Most of us have to make our own interpretation of each and be ready to recognize that "permanent" is not a term that can be applied freely.

For example, a street will be classified as permanent if it will provide at least 20 years of relatively maintenance-free service, but we would consider a trunk sewer that has 20 years of life expectancy as a bad investment. And we would be horrified at the placing of a boundary marker whose accuracy was not reliable after 20 years. Geologically, we shrug off 20 years as easily as we do a twentieth of a second.

Residents Pleased with Surfacing

In view of these evaluations, temporary seems rather transient and frequently undesirable. Nevertheless, the 19,000 residents of Bismarck, the capital of North Dakota in the south central part of the state, are delighted with "hard surfacing" for their streets, a temporary type of pavement. This surfacing is temporary in the sense that we cannot guarantee that it will give maintenance-free service for as long as 20 years. But it is a smooth, economical, attractive pavement; and the public has agreed that it is permanent enough for them, particularly in the light-traffic, residential areas.

We have used other types of pavement to good advantage, too. On federal and state highways that traverse the city, we have provided an 8-inch portland-cement concrete pavement, using the air-entraining type of cement. The North Dakota State Highway Department and the Federal Bureau of Public Roads participated in this construction.

In the downtown commercial areas that are subject to heavy truck traffic, we use our Type AA construction which consists of a 6-inch, clay-stabilized gravel base, a 2½-inch, asphaltic-concrete base course, and a 2-inch, asphaltic-concrete wearing course. On arterial streets carrying heavy local traffic, we use Type A construction, a 6-inch, clay-stabilized gravel base with a 3-inch asphaltic-concrete wearing course.

On residential streets that carry a moderate volume of traffic and in areas where residents request a more permanent type of pavement, we use what we call Type B surfacing. This construction consists of 4 inches of stabilized-gravel base, supporting a 2-inch, asphaltic-concrete wearing surface.

For the rest of the city, our residents have expressed a strong preference for the temporary hard surfacing. We make it plain that it is a relatively light-type pavement providing fundamentally an all-weather, dust-free, quick-draining surface. The residents all agree, before any work is undertaken, to permit further assessments to pay for additional work that the streets may require.

Successful Use in Cold Climates

We, of course, are not the first to use this type of construction. However, its successful use in an area subject to rigorous weather conditions may inspire others to make use of this thrifty type in their cities.

Our records, based on careful cost studies, show these averages:

Pavement	*Cost (per sq. yd.)*
Hard surfacing, including excavation, stabilized base, and surfacing	$ .50
Type B	2.25
Type A	2.50
Type AA	3.50
Concrete	6.00

Before we start work, we make sure that the public wants the pavement. Our first step is to create a

that Bismarck Prefers

And finally, an application of cover aggregate is made to produce the finished "temporary" surfacing.

In the next step, cutback asphalt is applied by means of a distributor to prime and seal the base which has been thoroughly compacted.

pavement district, then plans and specifications are prepared, and a notice is published asking for bids. To date, no contractor has cared to bid on this type of pavement, so the Board of City Commissioners instructs the Department of Public Works to proceed with construction on a force-account basis.

Before construction may proceed in any area, it is necessary that the adjoining property owners sign a petition requesting this type of pavement, and agree to permit additional assessments if needed. If the petition is signed by more than 50% of the abutting property owners, and if it is located in an area where this type of pavement will meet the traffic demands, the Board then instructs us to proceed with the work.

We use a 1,000-gallon Rosco asphalt distributor, a Hi-Way aggregate spreader, a Galion 5- to 8-ton, tandem, steel-tired roller, two 12,000-gallon asphalt storage tanks, and a Bros tank-car heater. We also use two Caterpillar motor graders and pneumatic-tired rollers.

Cost Studies

We consolidate as many blocks as possible of this type of work in one locality in order to help keep an accurate record of costs. Each consolidated unit carries a daily cost-analysis record, to which is posted the name of each employee who works on the project and his hourly rate. We have also established an equipment-rental schedule that covers the cost of operation plus depreciation. This, also, is entered on the daily cost record. When construction is complete in any one district the total cost is tabulated and 7% is added for engineering expenses. This cost of construction is then certified to the Board of City Commissioners who, in turn, certify it to the Special Assessment Commission.

Excavation to Receive Base

The first step in the construction is to excavate the street to proper subgrade elevation to receive the 4-inch, clay-stabilized base. When this base is placed and stabilized, it is flush with the lip of the gutter. We prepare the subgrade with the same degree of thoroughness that we do for the highest type of pavement.

We don't shortchange ourselves when we lay the clay-stabilized base. The more thoroughly the base is laid, the more successful this treatment will be. The gravel is windrowed on the street and mixed with sufficient soil binder to make the material stable. It is then compacted in thin layers, and water is added with a sprinkling truck. Pneumatic rollers follow immediately behind to provide thorough compaction from the bottom through to the top of the base course.

After the base has been laid, it is primed with an MC-0 cutback asphalt at the rate of 0.25 of a gallon per square yard. The street is then roped off for 24 hours and traffic is prohibited to allow the prime oil to penetrate as deeply as possible. At the end of this period, we place the seal oil at the rate of 0.3 of a gallon per square yard. We use HV Bitumuls for the seal coat.

This operation is followed immediately by a cover aggregate consisting of rock chips which have a maximum size of ½ inch. This is applied at the rate of 25 pounds per square yard and thoroughly rolled with the steel roller. Traffic is again restricted for a period of 24 hours and then the street is opened for use.

Repairing Failures

Failures are repaired the following year by the use of cold road mix; a second seal coat of HV Bitumuls and cover aggregate is applied. We anticipated applying this type of seal coat each year for five years, but the success of the work thus far has indicated that it may not be necessary to make these many applications.

Curb Cock Relocation *Simplified*

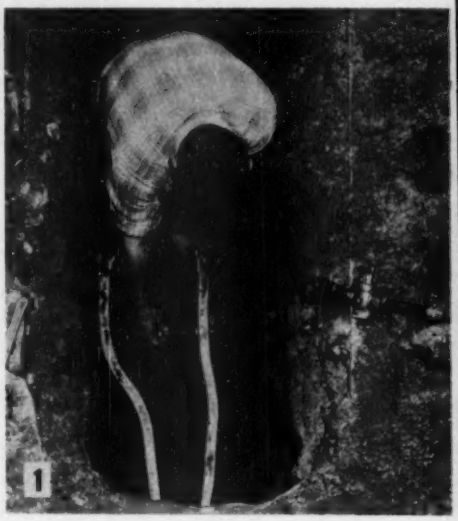
By MAURICE V. HEGARTY, *Vice-President and Chief of Operations*
Jamaica Water Supply Company, Jamaica, N. Y.

WHEN IT WAS organized in April 1887, the Jamaica Water Supply Company served the 7,000 population of the Village of Jamaica on Long Island. From 6 miles of mains and one steam-pumping station of 2.5 mgd (million gallons daily) capacity, the system has grown to 770 miles of mains and 54 wells with an available yield of 64.5 mgd. It serves 105,000 customers. A construction program, currently under way and scheduled for completion in mid-1954, will add 13 more wells and increase the available yield to 89 mgd. Four million gallons of storage capacity is also being added.

Average daily consumption, 10 years ago, was 32.3 mgd with a maximum of 51.1 mgd. Present average pumpage is 43.3 mgd with a maximum in 1953 of 65 mgd.

Approximately 26% of the water

RELOCATION *of a ⅝-inch curb cock on an old lead service line under pressure of 60-65 pounds per square inch*



1. Lead service line is cut under pressure. Note curb-cock assembly made up with adapter.
2. Final cut is made; assembly is stabbed over line and water diverted from ditch through hose. The end nut is then tightened with pressure on; curb cock is then shut off.
3. Hose, used to divert water, is removed, and male adapter is screwed into the curb cock. Line is then tied in with fittings on other side of sidewalk.
4. On property side, regular ⅝-inch threaded nipple and ¾-inch male adapters connect ¾-inch copper tube to ⅝-inch service line.

REPLACEMENT *of a 1-inch gate valve by a 1-inch curb cock on copper tube under pressure of 60-65 pounds per square inch*

1. Cutting 1-inch copper tube without shutting off ¾-inch curb cock at 8-inch main. Rigid copper cutter is used. Note 1-inch curb cock assembly.
2. Final cut is made and assembly is stabbed over service. End nut is tightened with pressure on.
3. Curb cock being shut off. Water is diverted to the street.
4. Assembly in place awaiting final service tie-in. Note small amount of water in hole.
5. Diverting hose removed; line is tied in with 1-inch coupling.

pumped is delivered through metered services, 61% through unmetered services, and 13% is unaccounted for. Based on Pitometer studies, it is estimated that the unaccounted-for water can be broken down as follows:

	Per Cent
Main and service leakage	5.5
Fixture leakage and under-registration of commercial meters	4.9
Public use	2.0
Company use	0.6

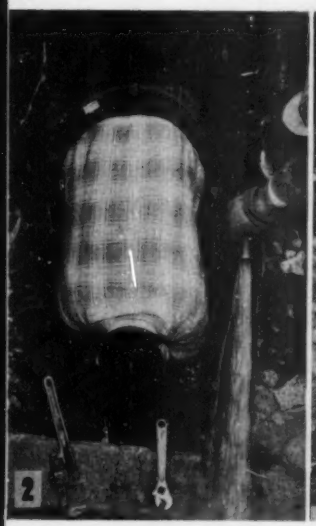
Just how much leakage is due to old and faulty house-service lines is not known, but elimination of this leakage is a positive benefit of a program of replacing old services. This program of service replacement came about as the result of a change in operations in 1935.

Prior to 1935, the water company simply made the tap in the main for any service and then left the connection to be made by a plumber hired by the house owner. The plumber installed the connection with no control by the company and, thereafter, it was maintained by the house owner. In 1935, the Public Service Commission required the company to maintain all existing service lines up to the customer's property line and to install and maintain all new services thereafter.

Many of these old services were not only leaking but had curb cocks that were located beneath the sidewalks. In some lines, gate valves replaced the usual curb cocks. In order to replace, repair, and maintain these service lines, it was found necessary to install new curb-cock and service connections.

Normal procedure would have required shutting off the corporation cock at the main. This would have involved breaking the pavement, digging, backfilling, and repaving. Not only would this method have been time and labor consuming, as well as expensive, it would also have presented the hazard of public nuisance of street openings.

To avoid this expensive method, a technique was adopted in which the service is changed or moved under pressure. The steps of the procedure are indicated in the accompanying illustrations which show operations on both lead and copper pipes. This method of operation is now standard, saves time, labor, reduces costs, and produces a service line that is acceptable for future use. All fittings in this procedure are supplied by Dresser Manufacturing Division.



Sewage Plant Repairs NOT NEEDED

The settling tanks (foreground) and digesters (background) perform more efficiently since receiving a biological assist. An enlargement of part of the digester wall (inset) shows the stains that are evidence of operating difficulties at the Borger plant.

Use of special, preserved microorganisms corrects a difficult digester-operating problem without the need for costly reconstruction

By J. M. JOHNSON
Director of Public Works
Borger, Texas

BY SUBSTITUTING a controlled application of dried, microbiological culture, Borger, Texas, has done away with the need for sewage-plant repairs that might have cost as much as $4,000.

Borger, a city of 18,000 in the northern part of the state, put its sewage-treatment plant into service in May 1949. Treatment consists of primary settling tanks, trickling filters followed by secondary settling, and separate sludge digesters—a design that has enjoyed universal recognition as a sturdy and reliable process.

Digester Problems

During the first winter's operation, we experienced some trouble with the treatment. The pH in the digesters dropped to an abnormally low figure and the sludge began to foam. A lime slurry applied at the rate of 300 pounds per day to the sludge well overcame this problem so well that we have now discontinued this treatment. This kind of difficulty, however, was not unusual for a new plant breaking in new equipment.

In the winter of 1952, a much more serious problem materialized. The digester covers began to crack, and the digester walls, where the covers joined, also showed signs of cracking. An examination disclosed that an accumulation of paper, plastic toys, bits of rubber and other similar substances had formed a 5½-foot-thick floating mass of dry, hard sludge which had cut off the gas flow.

After some months of inquiry we concluded that the most practical solution would be to tear out the sides of the tanks and dump the floating sludge on the ground. This was far from a pleasing prospect. Aside from the substantial cost of this repair work, we did not welcome the sight of sludge on the plant grounds.

In March 1952, we brought our problem to the Texas Water and Sewer Short School at College Station. C. A. Sanders, a former extension instructor with the water and sewer extension service, offered an alternate solution. He recommended the use of Bionetic, a dry, stable powder of groups of living microorganisms that is prepared in various forms. Some forms are preserved living cultures of the anaerobic organisms; others are aerobic organisms. Combinations of the two can be used for the various types of sewage treatment.

For our purposes, we decided to

try the anaerobic organisms designed to improve sludge digestion. We applied it to one of the digesters at the rate of 15 pounds per treatment and staged the treatment at a time when the tank was not receiving sludge. Pumping is alternated between the tanks in seven-day pumping periods.

Another similar application was made two weeks later to the second tank. The Bionetic was placed in the sludge well, and water from the primary clarifier of sufficient quantity to thoroughly dissolve and equally distribute Bionetic in the digester tanks was allowed to flow into the sludge well. This solution was transferred to the digesters by the sludge pump just before switching to the other tank.

Extended to Lift Stations

As a second corrective measure, we fed the Bionetic composed of another type of organisms into the lift stations that are distributed around the system. This type of organism was specifically designed to flocculate sewage, produce rapid settling, and accelerate the rate of sludge digestion.

Thus we had a greater spread of benefit from the Bionetic. It cleaned the wet wells in the lift stations of sludge clinging to the walls and greatly reduced the volume of floating sludge. It also dislodged particles that had accumulated in the sewer lines.

This treatment has cost a little more than $900 for nine months. We have on hand about 75 pounds of the product, which is 60 to 90 days' supply. Tanks usually receive about 15 pounds per treatment; lift stations, ⅓ of a pound per unit per day.

Applications to sludge tanks were suspended last year from April until the middle of December. We find that anaerobic Bionetic also aids with the digester problems when used out in the system, but since we have not installed heaters on our digester tanks, these anaerobic organisms are also needed in cold weather, and the benefits are noticeable a few days after treatment.

Bionetic served us beyond our expectations and saved us some $4,000 in repairs. We now have less than 24 inches of floating sludge left in the tanks; the sludge well is cleaner than it has been since it was built; the sludge on the drying beds is more thoroughly digested and dries more quickly; and the added benefit to lift stations and lines is evidence enough that we get good value for each dollar spent for these organisms.

Coral Gables' water utility uses a small air-hammer rig that

Hits Like a Heavyweight in Tight Quarters

By VICTOR E. MILLER
Superintendent of Distribution
Consumers' Water Company
Coral Gables, Fla.

THE LAND on this southeastern coast of Florida has very little top soil—in some places, none at all—and an outcropping of solid white limestone, called coral rock, which at most is covered by a few inches of soil. To dig a trench for laying a water main, we usually have to use air-powered hammers.

The City of Coral Gables (population 20,000) requires us to place our mains in rear-lot easements, provided throughout the city when it was originally surveyed. Getting heavy equipment into some of these easements is often next to impossible. Fortunately, we have found a light, portable compressor, a Lindsay T-33, that is easily pulled into any location, through surprisingly small openings, by one or two men.

The compressor came equipped with a 32-pound hammer that it handles effortlessly. On the occasions that have called for a heavier hammer, the compressor served without difficulty. It can satisfactorily supply air for our 75-pound hammer, provided the valve is not held open continuously. For normal work, the compressor's performance holds its own when compared to our larger 105-cfm compressor, when only this one heavier hammer is used. We acquired the portable compressor from the P. K. Lindsay Company, Everett 49, Mass.

Other Applicatons

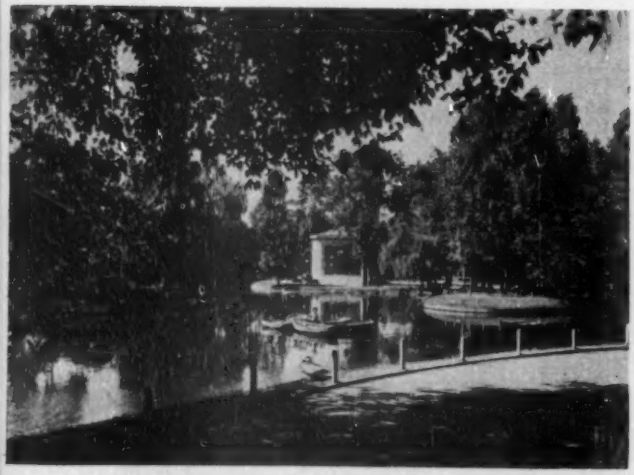
Other uses to which we have put the compressor include street-service cuts, as an aid in laying mains where ditching is done by machines, and for digging around telephone cables, sewers, and other water pipe.

Some of our employees who scoffed at the compressor when it was delivered now prefer it to our larger compressors.

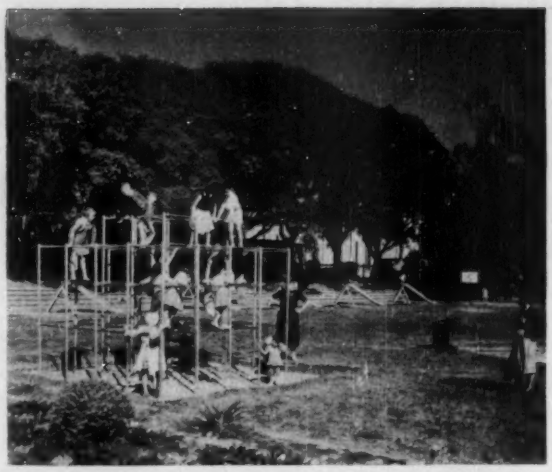
Trailer-mounted air compressor wheels easily into tight quarters and, at the same time, delivers enough power to allow the hammer to batter through coral rock.

Ramirez Beach, which is one of 12 public beaches within city limits, is near famous Rodo Park and within walking distance from the central business area of the city. In the background is the Faculty of Engineering; at the left are trees that mark the edge of the Municipal Golf Course.

"Stage Coach," a work of the Uruguayan sculptor Jose Belloni, helps keep alive historic tradition. Its location carefully planned, the monument creates an esthetically pleasing sight.



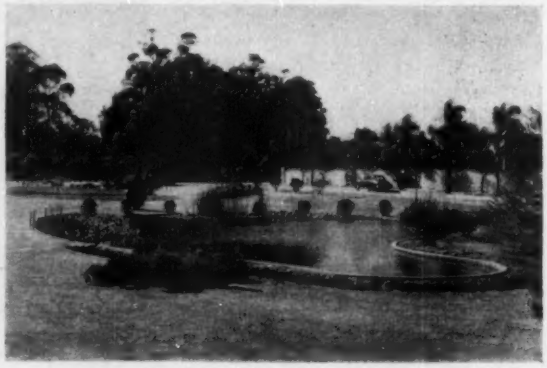
The music pavilion in Parque Rodo is frequently the scene of open-air concerts, attended by music lovers of all ages.



Recreational needs of hundreds of children are met daily by the "Children's Corner" at Parque Rodo where excellent equipment, play facilities, and privacy are afforded.

A small open space in the center of town—one of many—both beautifies the city and serves as a public garden.

An example of a "domestic scale" garden-park is this one in the Carrasco residential district of Uruguay's capital



Urban Progress in Latin America

By ANATOLE A. SOLOW, *Chief, Division of Housing & City Planning, Pan American Union, Washington, D. C.*

Montevideo • • •

A Case Study of Recreational Planning

URUGUAY, small in size as compared to its neighbors Argentina and Brazil, is universally recognized to be among the most progressive countries of South America. Its health standards, its low illiteracy rate, its high level of living, and its well-developed public institutions and traditions all support this opinion. But there is perhaps nothing that reflects more vividly and more profoundly the high achievements of this democratic society than the way in which Montevideo, Uruguay's capital, plans for the recreation of its 900,000 people. Here, indeed, is a program of parks, playgrounds, and public recreation facilities and open spaces well-conceived in its plan and brilliantly executed in action, which could well serve as an example to many cities in the United States.

Comprehensive Plan for Leisure Time Activity

It was during the Fourth Pan American Congress of Municipalities that I had occasion to visit Montevideo's park system, in the company of Juan Scasso, brilliant city planner and landscape architect, Director of Parks of the municipality, and father of the capital's recreation system.

According to Mr. Scasso, the recognition and acceptance of certain basic principles underlies the successful development of Montevideo's plan. Mr. Scasso never talks about parks but rather about recreation, in the firm belief that only by integral planning of *all* recreation facilities, whether outdoors or indoors, whether for active or passive recreation, whether for children or adults, can the true needs of a contemporary community be met for the leisure-time activities of its citizens.

Accordingly, the Municipality of Montevideo has approached the problem from an over-all planning point-of-view, into which all details fit and to which all elements are subordinated. Thus, a thorough study has been made of the leisure-time activities and needs of all age groups, considering all daily, weekend, or seasonal loads and taking into account the time as well as space and location factors.

Recreation for All

Mr. Scasso is convinced even more profoundly that *all* people, without exception, must be able to benefit from recreation facilities and that it is a sacred obligation of the community to provide them publicly for those who cannot afford them privately. Accordingly, Mr. Scasso advocates the concept, if not the slogan, that "the public parks of Montevideo must be private gardens of its citizens (especially of the poor ones)."

A social conscience prevails in Montevideo at all levels of the population as a result of a genuine respect for the human being. This is illustrated throughout the city, such as by the parks of Carrasco, an important and well laid-out residential district. Here is an example of the many small gardens and parks designed at a "domestic" scale and with such intimacy that the man from the street can feel as if the park were designed for his exclusive personal use.

Twelve Public Beaches Within City Limits

It is this same social conscience and sincere concern for the common man's welfare that has made Montevideo's beach development the envy of waterfront cities the world over. Yet, apparently, it was only a question of foresight and a matter of sticking to principles.

Where other cities have permitted uncontrolled industrial development with consequent pollution along their waterfronts instead of utilizing them for the people's recreational benefits, Montevideo has preserved and consciously developed its beaches along its extensive waterfront on the Rio Plata within city limits.

Where other towns permitted the cheap sale of public beachland to private owners and subsequently tried to repurchase it for the community at heavy costs to the taxpayer, Montevideo has from the beginning maintained public ownership of all beaches, on the grounds that they are essential to public welfare. This has paid huge dividends.

Ramirez Beach

The 12 public beaches with a combined length of approximately seven miles within city limits are the lungs of the city. They are accessible to all, and a short walk even from the central and densely built-up districts brings the resident to the beach where he can freely enjoy fresh air, sparkling sand, and clean water, such as at the Ramirez beach (shown in an accompanying photograph) near famous Rodo Park. In the background can be seen the Faculty of Engineering designed by Julio Villamajo, one of South America's most distinguished architects, who died only a few years ago. Beyond may be noted the trees of the Municipal Golf Course, which overlooks the sea and which is only five minutes from Montevideo's busy downtown center.

It may be said that each residential district has its own beach within walking distance.

Parks and squares occupy an area within and around the city of 3,193 acres. This is over 25% of the city's total 13,175 acres, but still more important is their planned distribution. By providing these public beaches and other ample open spaces in locations where they are needed and easily accessible, Montevideo has been able to develop economically its residential districts with apartments at

relatively high net residential density and yet eliminate, or at least minimize, the disadvantages of apartment living.

Perhaps one of the most significant concepts that has guided the Municipality of Montevideo is spiritual values to be derived from recreation and the importance of esthetic satisfaction. It is believed that beautiful environment has a significant and almost measurable effect upon people. Mr. Scasso's argument runs somewhat like this: The modern city, gray, agitated and ugly, needs the landscape architect to cheer it up with color, to provide it with quiet open spaces destined for rest and pleasure, and to embellish it with trees, plants, and flowers.

No other element can contribute as much as vegetation towards humanizing the city and making it more pleasant. Its monotonous and repetitive landscape changes radically with the appearance of the green and with the colors of flowers and plants.

Public Gardens Yield Aesthetic Satisfaction

Nothing delights the mind more than the view of a fresh and brilliant strip of color of a small square or public place that can be seen from an office window in the morning hours.

Nothing cheers up the spirit more and prepares better for the daily work than a walk amongst flowers to the office, factory, or store. These principles are artistically and lovingly applied to even the smallest available open space which is utilized to create public gardens.

Sculpture is used as an element of design, and the locations of monuments are blended with the landscape, the surrounding trees and shrubs, and with the topography after the most minute study of every detail. Illustrated is the "Stage Coach" by the Uruguayan sculptor, Jose Belloni, which, like the other famous Montevidean monument, the "Ox-Cart," tries quite consciously to keep alive among coming generations the memory and knowledge of the traditional elements which have contributed to the progress of the city and country.

Culture of Mind and Body

The parks of Montevideo are specially planned for cultural activities in addition to the usual sports and recreation facilities; pavilions for music, open-air theatres, outdoor band stands, etc., permit popular outdoor entertainment in all parts of the city. It is interesting to note that the municipality and the national government have many cultural institutes with orchestras, popular bands, theatrical companies, and ballets. And at performances it is quite common to see the highest society people intermingle with the poorest people from the street.

Children receive special attention, and large play areas are reserved and well-equipped for them in all parks. The variety of play facilities in the "Children's Corner" of Parque Rodo meets the recreational needs of hundreds of children at all times of day. The city employs many recreation leaders and play supervisors as an essential part of its program. Particular care is taken in the landscaping to screen play areas by trees and shrubs to give them privacy and to locate play equipment so as not to disturb the harmony and esthetic appearance of the ensemble.

Soccer—The National Sport

Soccer is Uruguay's national sport and the "Estadio Centenario" was designed by Mr. Scasso in 1930 with ample approaches and parking spaces to meet the needs of Montevideo's sports enthusiasts. It is interesting to note that this stadium is part of a group of installations that includes a velodrome, an athletic field, etc., in a large park, Jose Batalla y Ordonez, so that it forms a real campus of sports facilities.

Citizen Participation

The Park Department under Mr. Scasso's inspired leadership soon recognized that the best use of the parks, their maintenance and, in short, a continuing program depends on the citizens themselves. From the beginning many steps were taken to educate citizens, to arouse their interest and love for the gardens of the city and for landscaping in general and to make them participants in the beautification of their city. Various techniques were employed to this effect. For example, Montevideo has one of the largest nurseries in the world and offers free of charge seeds, shrubs, and flowers to residents who wish to improve their gardens. Every detail has been studied. Flowers are planted in such a way as to minimize vandalism and to appeal to the pride of the citizens.

Parks and the Master Plan

The park system forms part of Montevideo's master plan, which is carried forward by the municipality's city planning office. For example, along the coast, but situated so as not to disturb the beaches, runs a wide, beautifully landscaped boulevard, the "United Nations Avenue," which forms a parkway and which is continuously being extended and improved.

Finally, it is worth noting that a wise and foresighted policy of land acquisition many years ahead of anticipated needs insures that Montevideo's public open spaces will never be forgotten in any urban redevelopment or expansion.

Crowds of Montevideans gather at the Estadio Centenario to witness their national sport—soccer—which is followed as closely as is baseball in the United States.

Kankakee's swimming pool, part of the park improvement program.

By F. R. HENREKIN
Executive Director *
Committee of 100
South Bend, Ind.

Kankakee's Future Assured

through municipal-civic cooperation

THE CITIZENS of any community must decide the kind of community in which they want to live and work. Once this decision is made, the cost of this improved community must be determined. If the citizens are willing to pay this cost, then hard work, money, and careful planning will get the job done. Kankakee, Ill., is a prime example of how such a program can be successfully developed.

In 1944 Kankakee decided to develop a planning program. A Plan Commission was established by the City Council at the request of the Kankakee Chamber of Commerce. Mayor Albert F. Hattenburg appointed a Commission representing the various segments of civic and business life and local government bodies. A former President of the Chamber, Paul Diamond, was named Chairman and the writer Secretary.

The Commission promptly investigated the planning programs of other communities and developed a program of action. A three-year budget that would cover the cost of developing a comprehensive plan and a study of the sewer system was adopted.

Needed funds were appropriated by local government bodies. The city provided 45%, the township, 25%; and the School Board, the Park Board, and the county, 10% each. This idea was borrowed from Decatur, Ill. Commission members felt that, inasmuch as planning affects all local government agencies, these agencies should divide the cost.

The firm of Harland Bartholomew and Associates of St. Louis, Mo., was employed to prepare the comprehensive city plan and the firm of Warren and Van Praag, of Decatur, Ill., was retained for the sewer plan.

The engineers completed the plan in 1947. The comprehensive plan was for the next 25 years and the sewer plan for 30 years. The plan, based on a careful study of the economic background and the projected

* Mr. Henrekin was formerly Manager of the Kanakee Chamber of Commerce and Secretary of the Kankakee Plan Commission.

Here is an outstanding example of how a Chamber of Commerce and a City Plan Commission can work with forward-looking municipal officials in getting action on a comprehensive plan for their city's rational development

One of Kankakee's new and nationally known industries, the floor-tile plant of the Armstrong Cork Company.

future growth of population, covered land use and zoning, subdivision control and minimum building standards, major street system and parking, transportation facilities and terminals, schools and parks, housing, civic center, city's appearance, and capital budget program.

Three-Stage Sewer Plan

The sewer study resulted in a complete plan for improving and extending the system to take care of the future growth of the area. The plan recommended sewer improvements in three stages—the first to be constructed immediately to improve and extend interceptors and to build a relief sewer for the business district; the second part to be carried out in about 10 years, and the third in the future, when needed.

The next big task of the Plan Commission was to educate the citizens on all phases of the plan. The Commission took another important step. The engineers who had prepared the plan were retained as consultants in order to help carry out the plan. Kankakee does not have the funds to maintain a full-time planning staff, so the Commission did the next best thing, and that is retain consulting engineers. The Chamber of Commerce staff handled the business affairs of the Commission without cost to the city government. The key to the success later achieved by the planning program is the close teamwork between city officials and the Chamber of Commerce.

The education program included a series of newspaper articles, speakers before local organizations, and special brochures explaining all parts of the city plan to the citizens of the community. The complete plan was printed and made available to any interested citizen. The High School civics classes studied the plan as a part of their curriculum. The educational effort is a continuous job.

In carrying out the various parts of the plan, the schools were given priority. The physical plant was old, new buildings were needed, and existing structures needed to be modernized.

The Kankakee School Board invited the College of Education of the University of Illinois to make a study of the school system. Based on the University study and the city plan, school architects were employed to prepare plans and specifications for two new junior high schools, a gymnasium for the senior high school, one new grade school, additions to two new grade schools, and modernization of all existing buildings preparatory to presenting a bond issue to the voters. As a result, citizens approved a bond issue for $2,125,000 by a vote of 8 to 1.

Parks and Recreation

The Park Board employed the city plan engineers to prepare a complete plan for additional parks and recreation facilities. The voters later approved a bond issue for $650,000 to add new parks and playgrounds, construct a modern swimming pool and a boat harbor, and improve existing parks by adding needed recreational facilities. Park acreage was increased from 122 to 183 acres.

At the same election, sewer bonds were approved for $500,000 and the City of Kankakee issued $350,000 in sewer revenue bonds. The first part of the sewer-improvement program, as recommended by engineers, was constructed with the $850,000 raised by the two bond issues.

The Plan Commission successfully recommended the adoption of the modern zoning ordinance and the subdivision control ordinance effective within the city and for a distance of 1½ miles beyond the city limits.

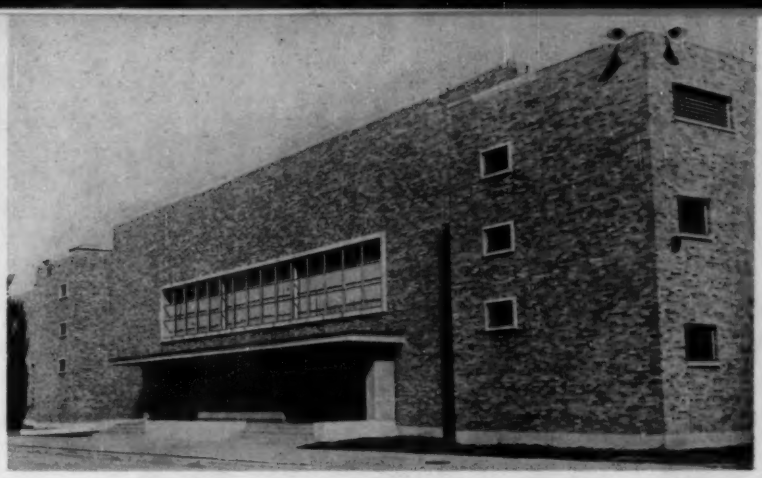
Off-Street Parking Tackled

In Kankakee as elsewhere automobile parking is a major problem. The comprehensive city plan recommended two steps: (1) that meters be installed on the streets and (2) that off-street facilities be provided for 500 cars.

At the recommendation of Mayor Hattenburg the City Council approved the appointment of a Parking Commission of five, who undertook the development of the parking program.

The first step was the installation of on-street meters. Next, the Parking Commission employed the plan engineers to complete the preliminary off-street plan recommended in the comprehensive plan. Matthew Carey, municipal finance consultant of Detroit, Mich., was engaged to handle the financial details in connection with the bond issue program.

The completed plan recommended 11 lots at an estimated cost of $515,000 for land and improvements. All lots were to be blacktopped, with parking meters installed for control



West Junior High School is a tangible result of the school modernization program that took place in Kankakee, Ill.

of parking. There were to be nine lots for customer parking and two lots with a 10-hour limit for people who worked in the business district.

It was recommended that the program be financed with revenue bonds to be retired from the meter revenue from both street and off-street meters, made possible by a 1947 enabling act passed by the Illinois Legislature. Bond attorneys required a Supreme Court test of the law, which was undertaken by Kankakee with the financial assistance of other Illinois cities. The Supreme Court decision in September 1950 upheld the state law and the Kankakee ordinance. The parking revenue bonds were sold in December 1951 and the off-street parking facilities were completed early in 1953.

Major Street Plan

The Plan Commision, city officials, and the Chamber of Commerce now turned attention to the major street plan. Traffic on the major highways passing through Kankakee was congested, particularly at the Washington Avenue bridge. Three federal highways converged at this point.

The Comprehensive Plan recommended the construction of a belt highway around the east side of the city and a new city route and river bridge within the city. State highway officials approved the recommendation of the city plan engineers and work is now in progress on the East Belt, including the construction of twin bridges over the Kankakee River. The belt route is a freeway 7.2 miles in length with an estimated cost of $3,560,876.

There was a difference of opinion among the citizens of Kankakee as to the location of the city route, particularly the river bridge. State highway officials insisted that Kankakee reach a decision before they proceeded with this part of the program.

The Chamber of Commerce arranged a meeting at Springfield with the Chief Engineer of the Division of Highways and invited all interested citizens to attend. One hundred thirty-two Kankakeeans, including city officials and members of the State Legislature from that district, went in a body to the State Capitol by train to attend the meeting. After discussing the matter for approximately one hour with the chief engineer, it was unanimously agreed to accept the City Plan Engineers' recommendation of the Schuyler Avenue location. The bridge is now under construction and will be completed early in 1954, at a cost of $1,000,000.

Mercury Vapor Lighting System

The Retail Trade Division of the Chamber of Commerce joined in the spirit of the planning program and petitioned city officials to install a modern street-lighting system in the retail district. As a result, a special assessment was levied on business property and a modern mercury-vapor lighting system was installed at a cost of $162,000.

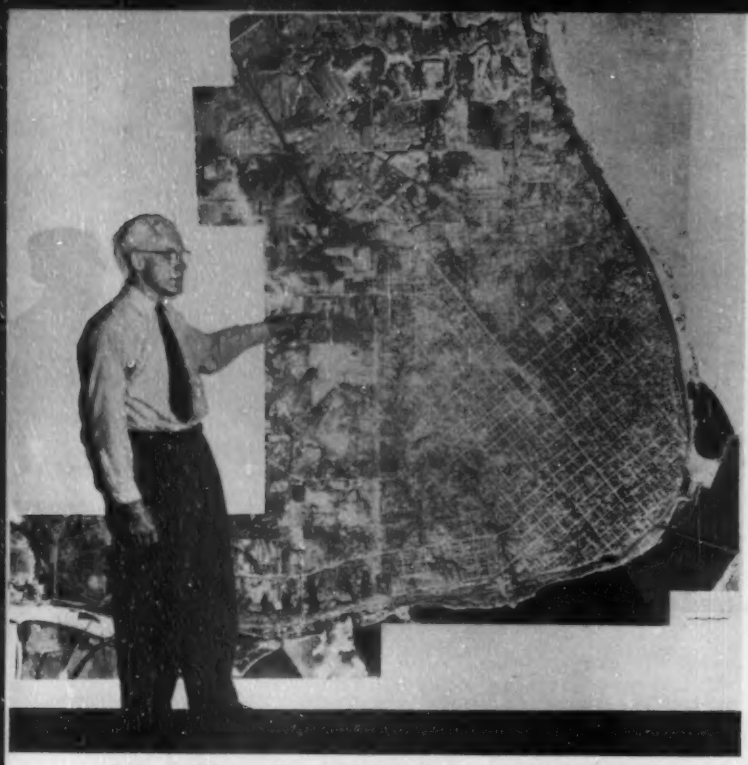
It is fortunate that Kankakee began its planning program in 1944, because in 1946 the area entered a period of rapid growth. Between 1946 and 1952 nine nationally known industries have located manufacturing plants in the Kankakee area. In addition, many existing industries have greatly expanded their facilities.

Industrial Growth Results

It is estimated that approximately $65,000,000 were invested in new plants and equipment by the new industries, for expansion of existing plants and for the utility services needed to serve these industries. About 4,000 new jobs were added to the area payrolls.

The new industries include: The Borden Soy Processing Company; Armstrong Cork Company; Armour Laboratories; Gaines Division, General Foods Corporation; The Kankakee Distribution Center, General Foods Corporation; Gould National Batteries, Inc.; General Mills Corporation; The Simoniz Company; and A. O. Smith Corporation.

Kankakee was ready for this growth. Parks, sewer system, parking facilities, zoning, subdivision control, achieved as a result of the planning program, had been taken care of in time. The community leadership and public officials are determined that the future growth of the area will follow the comprehensive plan—that every effort must be made to provide the citizens with a modern, livable city.



It is possible to solve countless problems pertaining to city growth in an office rather than in the field when good aerial maps are available.

The value of

Aerial Mapping

for the small city

By C. G. DRESSER, *Consulting Engineer*
Chairman, City Plan Commission
Keokuk, Iowa

THE CITY OF KEOKUK is located in the extreme southeast corner of the state of Iowa, at a bend in the Mississippi River. The 16,000 inhabitants are fairly well concentrated in an area of about four square miles, which is spread out on an extensive bluff 150 feet above the river and overlooks a mile-wide lake, which extends some 40 miles upstream. This gives the city a beautiful setting.

Some two years ago the City Council decided to form a Planning Commission, in accordance with long-established state laws. A group of men were selected by the Council and started to work to determine what could be done for the long-time betterment of the city.

After careful study of the successes and failures of other planning commissions, these men decided that the first requirement for any planning was an accurate map of the city and its environs. While the hard-worked city engineer had prepared maps showing all the usual features, they were on a flat plane. There had been little time—and less urge from any direction—to compile complete topographic information. The only topographical map available was that made by agencies of the U. S. Government in connection with work done on the river for navigation and flood control projects. This map, however, covered only the land immediately contiguous to the banks of the river and did not extend back into the main city.

Problems in Main City

The Planning Commission was faced with the urgency of several problems, all of which involved accurate knowledge of the terrain. Briefly, these problems were:

(a) An extension of the sewer system to vacant land areas, so homes could be built

(b) Proper layouts of streets in these same areas, so that terrain could be used to best advantage, both for utility and beauty

(c) A determination of what areas were beyond a gravity sewer system, and special development of such areas

(d) A determination of what areas were most suitable for city expansion.

No really adequate solution could be found for any of these problems without accurate knowledge of the topography. We realized that a sewer survey might shortly be required, and that comprehensive city planning would be of great value, but each of these studies required accurate knowledge of the topography. Therefore these and other problems were set aside temporarily and we concentrated on a study of various methods for obtaining topographic maps.

After intensive study we decided aerial mapping was cheapest and best, and after competitive bidding among four firms, a contract for this work was let to an experienced firm, Jack Ammann, Photogrammetric Engineers, San Antonio, Texas. They did an outstanding job and furnished us with topographic maps on 5-foot intervals, which have proved to be more accurate than our specifications.

Before this mapping work was completed the Planning Commission decided to recommend a long-range program, which was approved by the City Council. In consequence two additional contracts were made; one to the Black and Veatch firm of Kansas City, Mo., for a sewer survey and the second to Harland Bartholomew and Associates, St. Louis, for a comprehensive city plan. Both of these projects required topography, which

these firms would have had to provide, had not the city anticipated these requirements through aerial mapping. By combining these last two projects the city obtained a more thorough job, with specialization where needed and some economies where overlapping might have occurred.

The Plan Commission tried to envision just how aerial mapping could help the city in its future growth and development, and the contract provided for the following features:

(a) We selected a scale of 200 feet to the inch for all maps.

(b) All maps were to be tied into the state system of co-ordinates.

(c) A photo-map was ordered for use of the Council and the city engineer. This is mounted on the wall of the Council Chamber and is in almost constant use. In addition, several local industries purchased copies, and the school system has copies in the senior and junior high schools.

(d) A complete set of photo mosaics was ordered, after dividing the city into suitable rectangles for reference.

(e) Photogrammetric tracings were made to match each photo mosaic, on which are shown the contours of the area, as well as the outline of streets and principal buildings and other natural features.

(f) Three copies were made of each of the above tracings, and these will be used by different departments. On one will show all the water lines; another will be used to show all sewers; the third will remain unaltered. If a need develops for grouping other features on a map we can easily obtain photographic tracings from the aerial-survey contractor.

It is apparent that if all of the above information were put on one set of tracings there would be such a mass of detail that its usefulness would be seriously impaired. These tracings can be kept up to date by the city engineer as changes take place over future years.

Greater Coverage for Future

Before the aerial photographs were taken, the Planning Commission made arrangements for the plane to cover a much greater area than we proposed to use in our present maps. The cost of such coverage is slight, when the plane is in the air, and once the area is photographed it is comparatively simple to obtain topography at some future date, as this work is done in the laboratory of the aerial photographer. These additional photographs are stored with the contractor, until such time as we need maps of the larger areas.

All base maps, made by the sewer-survey engineers and the planning engineers, were made at the same scale, and cover the same areas as the sets of aerial maps. Therefore these semitransparent tracings can be laid over the photo mosaics, or any of the other sets, and true relationships obtained. We are told that our complete sets of maps will be most unusual for a city of this size, because of their uniformity and the great amount of detail.

Through a proper filing system the several maps, depicting different features of each area, are kept together in cabinet drawers. The city holds copyrights to all maps, and prints will be supplied to any interested persons at reasonable prices. Originals of the tracings and the photo mosaics are separately filed in fireproof vaults so our original records can never be destroyed.

The various tracings and photographs are finding increasing use, and anyone familiar with the various activities of a municipality can begin to see the many and varied uses. We are of the opinion that we "builded better than we knew" when we used aerial photography as the basis of all our mapping and planning.

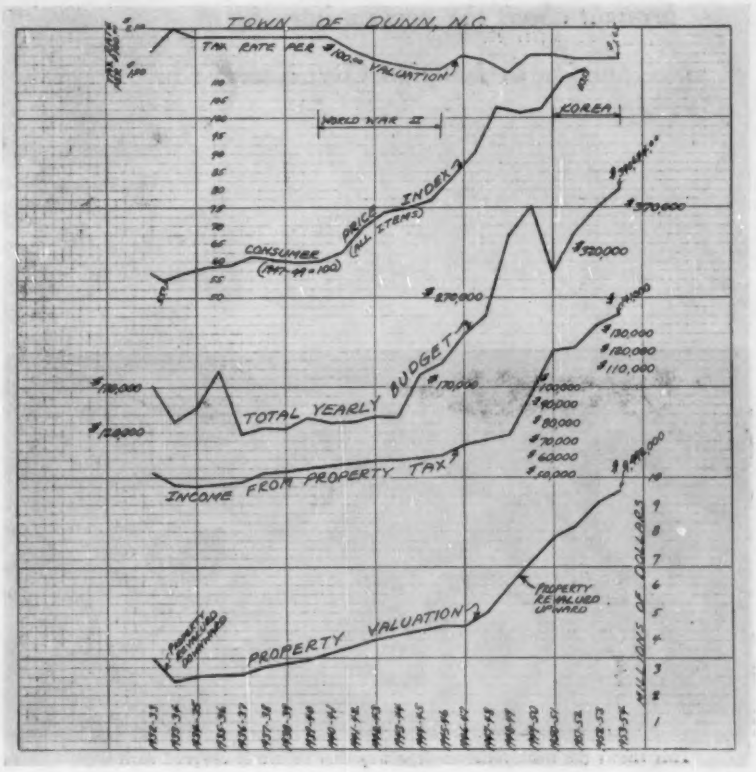
It is also our opinion that there is no move any city can make, regardless of its size, which will provide such complete data as will aerial mapping. Countless problems can be solved in an office, rather than by going out to the area in question and trying to visualize a situation from an automobile or afoot. With an aerial map you can see it far better, more completely, and measure more accurately — all while sitting at a table.

Chart Shows Trends Of Key Interest to Taxpayer

DUNN, N. C., a town of 7,000 inhabitants, located in a rich agricultural area, is one community that will know where it stands as several new industrial developments proceed, reports A. B. Uzzle, Jr., City Manager.

The attached chart, prepared by Mr. Uzzle, shows several of the significant trends of key interest to the municipal taxpayer, including the total property valuation, income from property tax, total yearly budget, consumer price index, and tax rate per $100 valuation.

It also shows that, although there has been a great increase in municipal services and facilities offered to the citizens of Dunn, the tax rate per $100 valuation has remained practically stable.



The Sanitary Fill Series — Trench Type

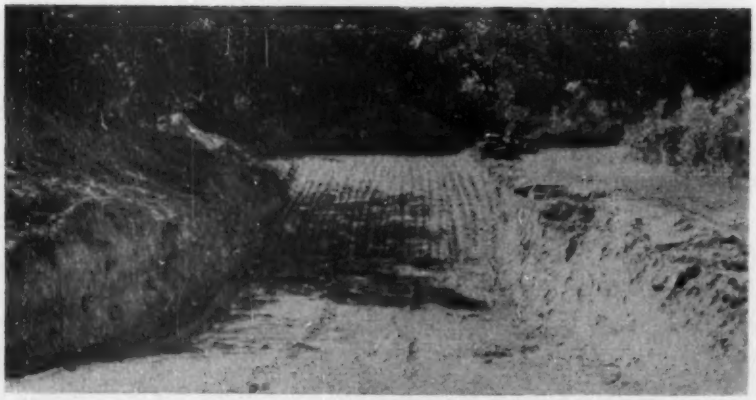
THE TRENCH TYPE of sanitary fill is an orderly method of refuse disposal, particularly useful on flat or gently rolling ground. The trench may be six to fifteen feet wide and is generally about six feet deep. Refuse is placed in the trench to a depth of ten to fifteen feet. It is then covered with earth taken from the trench that is excavated to receive the next day's contribution of refuse.

The stories on these four pages show how the sanitary fill operates in three Midwestern communities.

Civic Pride

. . . plus a legislative prod brought about the new sanitary fill in Junction City, Kans.

The tractor, which is equipped with a front-end shovel, is used to excavate a receiving trench for the sanitary fill.



This shows the neat, nuisance-free way that refuse is covered each day.

By V. A. BASGALL
City Manager
Junction City, Kans.

NATIONAL POLITICS didn't have anything to do with the decision of Junction City to adopt the sanitary fill, even though the fill operation adjoins the Republican River. The decision was prompted by a local civic desire to rid the city of the nuisance of odor, smoke, rat and insect-breeding places close to the city. The old, open dump created a very bad health condition and was a constant source of embarrassment, since it was located on the river bank along-

side a highway leading into town.

Another factor helped us decide on the sanitary fill. Recently, the state legislature prohibited the use of raw garbage for hog feeding which had been a practice of the city. Thus, one can say that civic pride, plus a legislative prod, brought about the present improvement.

The new site is also beside the river, but in a more secluded location removed from the highway. However, the Fort Riley Military Reservation is located on the opposite side of the river, and military officials there let us know plainly that they would not tolerate its becoming a nuisance. This meant that we would have to conduct the fill work so that there would be no burning whatsoever and no rat or insect odors.

To meet these specifications, the city designed its fill work to receive all of the refuse including brush and garbage. A Caterpillar D-4 crawler tractor with a Trackson front-end shovel was purchased to make the trench excavation, compact, and cover the refuse. One full-time operator is assigned to the fill, working 10 hours daily and 4 hours on Sunday.

The soil at this location is a sandy silt, very adaptable to this work. All trenches are dug to a depth of 6 feet and to a width of 10 to 12 feet. The material is compacted frequently throughout the day and a cover of earth 4 to 6 inches thick is used at the end of each day. A fill of 2 feet is used for the final grade. We do not permit any scavengers on the site.

We have drilled a well and installed a pressure water system on the site so that we can conveniently wash all equipment. This area will be developed for park purposes when the sanitary fill is completed. We then will have the water well for use as a park utility.

We have no complaints about the fill being a nuisance. The military officials frequently inspect the work and have expressed complete satisfaction. We keep the area neat at all times and encourage visitors to inspect the site and observe operations.

The first step in the work is to excavate the trench and place the cover material in a convenient location close by.

One Man, One Machine

Emporia puts its disposal program on a sanitary operating basis with a minimum of men and equipment

By WALTER F. JOHNSON
City Manager
Emporia, Kans.

ONE MAN operating one crawler tractor would seem to be a small investment for good municipal refuse disposal. Nevertheless, one skilled operator using the right crawler tractor has been able to build Emporia's refuse disposal work into a thoroughly efficient sanitary fill operation that gives us the added dividend of reclaiming wasteland.

Emporia has a population of 15,800 contributing to the fill. The city has

(*Continued on page* 104)

One of Emporia's Gar Wood Load-Packers delivers its refuse to the excavated trench.

After compacting the refuse, the tractor covers it with 18 inches of earth (inset). Below is the finished area. One would scarcely believe that beneath this surface lie the discarded wastes from Emporia.

been using the sanitary fill method for the past eight years and has concentrated on the trench method of disposal. Trenches are dug to a depth of 6 feet and to a width of 10 feet, or approximately 1½ times the width of the tractor. This gives it the opportunity of maneuvering in the trench and compacting all portions of the refuse. The compacted refuse is covered with 18 inches of earth.

The tractor used is a Caterpillar D-4 with a Traxcavator front-end shovel. This combination excavates the trench, spreads and compacts the refuse, and does the final covering. It has to handle approximately 21,000 cubic yards of refuse annually. The amount of settlement in the fill over the past eight years has been negligible.

The completed areas have, in the past, been returned to farming purposes. The fills have been built in low, marginal lands, and the work has resulted in a great improvement in the land values.

Do You Realize

. . . that a city's garbage can turn wasteland into a beautiful playground?

By CHARLES F. SCHWALM
City Manager
Hamilton, Ohio

FOUR YEARS AGO, Hamilton's garbage and refuse were dumped in a low-lying area near the river. The land here was not only worthless but also objectionable because of rats, flies, odor, and the other inescapable nuisances of a dump. Today, this area is being built up to grade, leveled, drained, and gradually being prepared for final development as a playground. No one will suspect that the city's garbage is a foundation for that playground.

Prior to the initiation of the sanitary fill for disposal of refuse, hog feeding, incineration, and other methods were studied. However, the availability of this low-lying ground and the attractive estimates on cost of disposal sold us on the fill method. Our decision has proved to have been a good one.

Following a three-year financial schedule, our open-body trucks were replaced with Leach Packmasters and Gar Wood Load-Packers so that the fleet of nine is now entirely enclosed. Waste collections are made daily in the downtown business area and twice each week in the residential districts. Pick-ups are made from alleys wherever possible or from the curb. The trucks operate with a driver and two loaders each, bringing our cost of collection and delivery to the sanitary fill area to $1.02 per cubic yard. We find this cost considerably below the cost of operating the open trucks which required three loaders. The advantage of the enclosed collection trucks, from a pub-

lic service standpoint, simply cannot be measured in terms of money.

The sanitary fill area has a deep gravel subsoil, topped with from 2 to 8 feet of dirt. It receives some 9,000 cubic yards of refuse each month at an average cost of 17 cents per cubic yard. The actual technique of disposal is simple and is handled entirely by two men, a Thew-Lorain shovel with Owens yard bucket, and a Caterpillar Dozer. The 20-foot trench is dug by the crane to a depth of some 10 feet, the trucks dump directly into the trench, and the bulldozer compacts the material as received.

We obtain approximately 70% compaction in dry weather and even more in the rainy season. The compacted refuse is covered with 3 feet of dirt, providing a ramp for the next day's operation. The final grade of the completed trench is 6 to 8 feet above the original grade. Some 2 to 3 acres are put to fill-and-cover each year, providing a level, solid, usable tract.

Roy J. Fiemeyer, director of public works, and Don Fisher, superintendent of refuse collection and disposal, have conducted on-the-spot time and motion studies of the various steps in the collection and disposal operation in order to establish the most efficient methods of handling and scheduling each operation. Routes have been mapped and remapped so that the trucks will cover the greatest possible area in the least possible time and yet maintain a high level of service. Due to the fact that new residential subdivisions are being annexed to the city constantly, the schedules must be frequently revised so that service can be extended without disrupting the efficiency of the work flow. Since the residents do not pay for the collection, it is especially necessary that the cost of the operation is held to a minimum. Without vigilance, annexation of the new areas could unbalance our cost budgets.

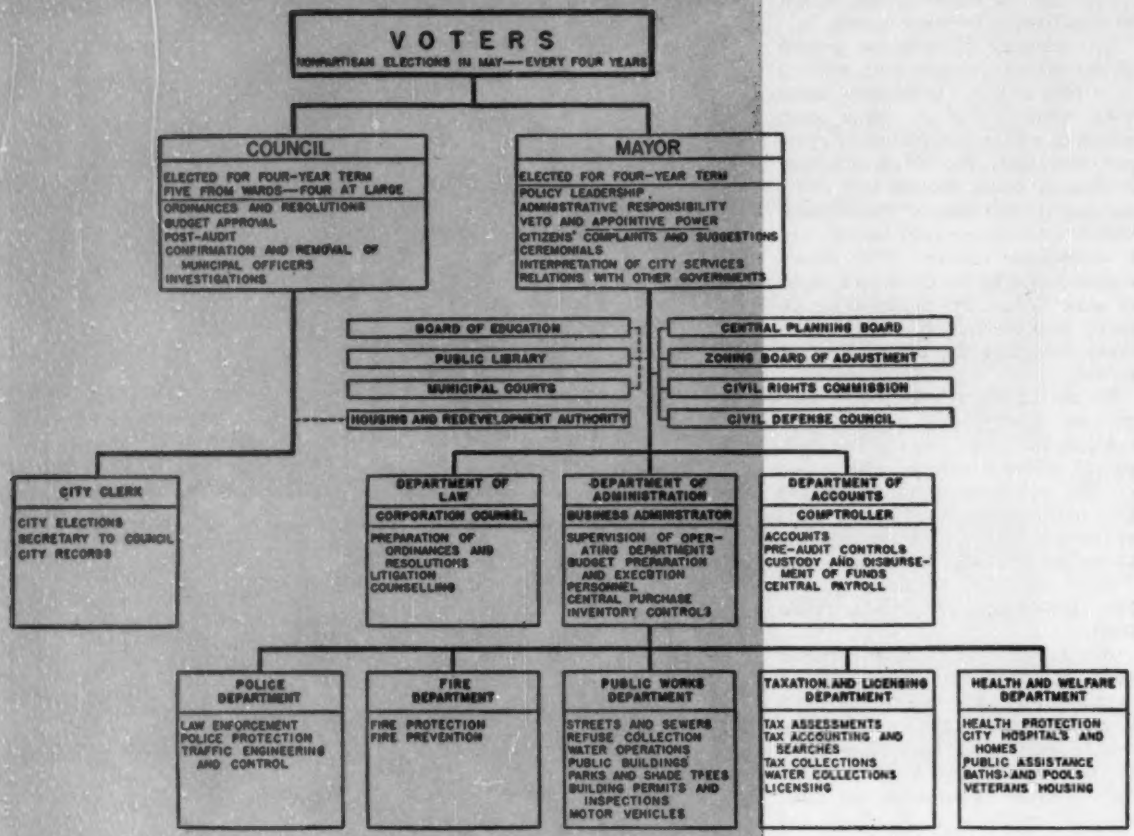
Praises

The chief engineer of the Ohio Department of Health wrote us in 1950 after a survey of our newly established sanitary fill: "The City of Hamilton is to be highly commended for its very satisfactory garbage and refuse collection and disposal. It is one of the best that we have found in our survey of the various programs throughout the state. We would like to have the privilege of suggesting to other municipal officials that they visit your city to obtain first-hand information."

Hamilton uses a crane and clamshell bucket to excavate the sanitary-fill trench.

Trucks deliver their loads of refuse to the edge of the trench, where a Caterpillar tractor is then employed to compact the refuse and cover it with 3 feet of earth.

A playground will soon occupy this finished area.



Newark Gets A Modern City Charter

By BENJAMIN BAKER
Assistant Professor of Political Science
Rutgers University
New Brunswick, N. J.

AN INTERESTING EXPERIMENT in municipal government has just taken place in New Jersey. Citizens of Newark, New Jersey's most populous municipality, disgusted with 36 years of commission government, voted to scrap it in favor of the mayor-council type.

The law under which charter revision has been carried out is the Optional Municipal Charter Law of 1950, more popularly known as the Faulkner Act. Under this statute, municipalities desiring to change their form of government are offered a wide range of choice.

Three basic charters—the mayor-council, council-manager, and the small municipalities plan—in 15 versions are available. Differences in the plans are largely related to such matters as the number of councilmen, concurrent or overlapping terms of office, ward representation, and the use of partisan or nonpartisan elections.

Citizens of a municipality who desire to change their form of government may employ either the process of direct petition and referendum, or a charter commission to study the existing form of government and make recommendations for change. If the second alternative is adopted, then the proposal for a study of the government and the selection of a

charter commission must be submitted to the people for their approval.

In Newark the movement for charter revision began in January, 1953. In the middle of that month, Leo Carlin, then Director of Public Works, announced that he favored a study of the city's governmental structure. Characterizing the commission form as a "splinter system of government," Mr. Carlin called upon the city commission to authorize an election in May 1953 on the question: *"Shall a charter commission be elected to study the charter of the city of Newark, and to consider a new charter or improvements in the present charter and to make recommendations thereon?"*

At approximately the same time the Newark Citizens' Committee on Municipal Government, organized four years earlier to obtain support for the passage of the Faulkner Act, announced at a public meeting that it would solicit signatures for a referendum to study the form of government, and that it would nominate candidates for the proposed charter commission.

The Carlin motion, laid aside for two weeks, was considered by the city commission on February 4. After a heated debate, the proposal to put the charter referendum study on the ballot was defeated by a three to two vote.

Citizens' Committee Activated

The failure of the governing body to act favorably left the field largely to the citizens' committee. It chose a five-man slate for the charter commission and launched an intensive drive to obtain the legally required number of signatures in support of both its nominees and the charter referendum.

Volunteer teams composed of civic, labor, professional, and business groups, conducted a door-to-door campaign, solicited signatures on the streets of downtown Newark, and even boarded buses at various points to ask citizens to sign petitions. Assisted by a favorable press, the campaign more than justified the hopes of its sponsors.

In the weeks that followed, the NCCMG sought to educate the citizenry to the need for a nonpartisan study of their government. Public acceptance was gradual but definite. In March four candidates for election to the city commission expressed themselves in favor of putting the charter referendum on the ballot. On May 12 a total of 63,151 votes were cast in favor of the question; only 8,189 votes were recorded in opposition. The five-member charter commission slate sponsored by the NCCMG was also elected by a substantial majority.

Within a few days after its election, the charter commission was ready to begin work. It selected Alan V. Lowenstein as chairman, obtained an allotment of money from the governing body, and hired five consultants to assist it in making a study of the governmental structure of Newark.

Charter Commission's Procedure

In the light of subsequent charges made by its opponents, it is of interest to note that the charter commission took itself seriously. Individual conferences were held with the newly elected city commissioners. Seven public hearings were conducted either at City Hall or in various neighborhoods. Informal meetings were convened with organized groups representing all shades of opinion within the city. Field surveys were made to Hartford, Boston, and Philadelphia.

In August the charter commission issued a preliminary report for the consideration of the citizens. In it tentative decisions were set forth and the people were asked to give their advice. On September 3, the charter commission issued its final conclusions.

The final report constituted a severe indictment of the commission government. Municipal government in Newark, in the words of the charter study group, was "wasteful, extravagant, uncoordinated, and not responsive to the needs of our city."

Low civic pride and morale was found to exist among city employees. Five governments instead of one were in operation, and as a result, the city was deprived of the opportunity for effective leadership. Throughout its report stress was placed upon the need for unified action, coordination of services and a higher standard of performance of the city's business.

Strong Mayor-Administrator Form Recommended

The charter commission recommended that the voters adopt a strong mayor-administrator form of government, with a mayor responsible for policy leadership and a business manager in charge of the details of budget, personnel, and purchase. The governing body was to consist of a council of nine, five of whom were to be elected on the basis of newly created wards.

The ink was hardly dry on the report when the political brickbats began to fly. Wild charges and appeals to all sections of the community were made, in the effort to keep the old form of government.

Supporters of the charter reform were quick to respond. Civic groups, organized labor and independent citizens rallied to its side. Such groups as the Taxpayers Protective League, the City Council, the Municipal Managers League, and the Young Democrats, joined with many other organizations in announcing their support of charter revision.

The Newark Citizens' Committee on Municipal Government, principal proponent of charter change, continued its effective campaign of personal contact with the voter.

In the November elections a stinging rebuke was administered to the opposition. Newark citizens by a 2-1 vote adopted the recommendations of the Charter Commission for a strong mayor-administrator type of government.

Thus the first barrier has been hurdled. Newark now has an instrument of government more in line with advanced municipal practice. Next May a new government will be chosen. Effective government requires capable people. To complete the governmental reform Newark citizens now must choose officials of whom they can be justly proud.

EDITORIAL NOTE — See, for comparison, "Four Steps to Better Government of Large Cities," THE AMERICAN CITY for January 1954, page 131.

Cornell University Aids City of Cortland, N. Y.

CORTLAND, N. Y., has been selected for a two-year Cornell study in city planning and municipal administration, according to a recent announcement by Mayor Robert Kerr and the University.

"Exercise Cortland" began in December as a project carried out by groups of graduate students from the School of Business and Public Administration and the Department of City Planning in the College of Architecture. The project will result in preparation of a general report of municipal activities, a "master plan" to guide long-range physical development of the city, and a "capital budget" of proposed public works for the following six years.

Supervisors for the project are Professor A. M. Hillhouse, a leading authority in the field of municipal finance, and Professor John W. Reps, former head of planning for Broome County.

Robert Fye, of the Ridge Tool Company, demonstrates the Ridge 500 power threader.

"A How-to-do-it" Water Works Meeting

South Carolina water and sewage officials pass up technical papers to concentrate on demonstrations and exhibits

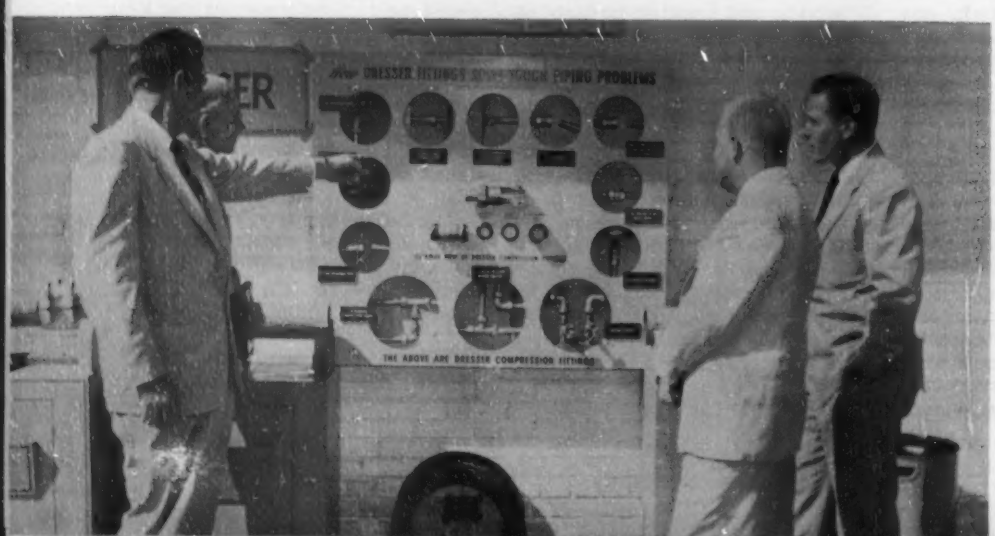
THE "SHOW-ME" spirit left its traditional state of Missouri and turned up in the annual meeting of the South Carolina Water and Sewage Works Association, held recently in Sumter, S. C. The meeting presented no technical papers or written discussions of any kind, but concentrated on working exhibits that illustrated good water-works practice.

The Meeting

The meeting, attended by roughly 200 water- and sewage-works men, was held in the offices and shops of the Cities Supply Company in Sumter. M. B. Randle, company president, acted as host of the meeting and of a southern-style barbecued chicken dinner.

On exhibit were small, portable, meter-testing units; a new specially designed service-pipe threading machine; all sizes of Dresser couplings fitting the smallest to the largest pipes; an active water-tapping demonstration; a working meter-test bench showing multiple testing of meters; and a demonstration of a shot-impact method of cleaning water meters. The Cities Supply Company is one of the few water-meter repair shops in the country to use this high-speed method of cleaning meters.

President of the South Carolina Water and Sewage Works Association for the coming year is Guy H. White, water superintendent for Columbia. Vice-President is J. D. Spence, superintendent of sewage for Greenville. W. T. Linton, of the South Carolina State Board of Health, was re-elected secretary-treasurer.



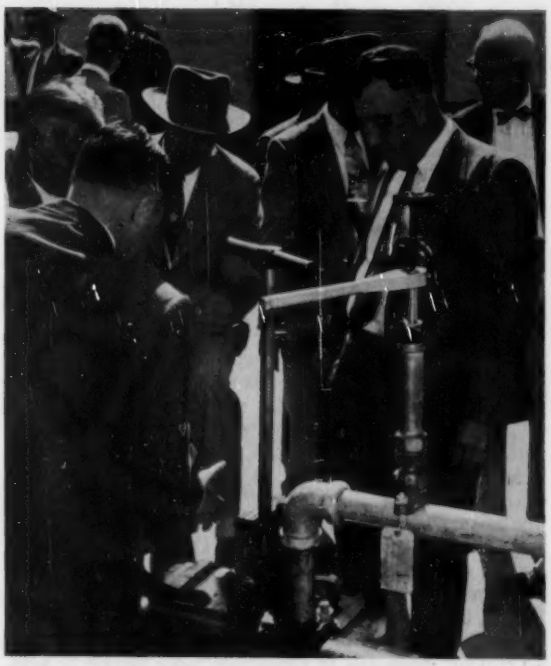
"Name your pipe size; there is a no-thread coupling for it," says Henry Pebbles of the Dresser Manufacturing Company.

The new Ford Meter Box meter-test bench attracted much interest.

No town is so small that it cannot afford a meter-test unit like the one pictured here. Its portability makes it advantageous to larger systems also. The unit was assembled by the meeting host, Cities Supply Company.

The "before" view of a collection of dirty water meters about to enter the American Wheelabrator shot-impact cleaner.

The meters, as they looked after emerging from the cleaner.



A close-up lesson demonstrates how very simple it really is to install a pipe tap when using the Hays tapping machine.

Achievements that brought recognition to the

Eleven "All-America" Cities of 1953

THE ANNUAL "All-America Cities" competition, as previously mentioned in THE AMERICAN CITY, was an important feature of the 1953 National Conference on Government, held by the National Municipal League in Richmond, Va., November 9-11. Co-sponsor of the competition was *Look* Magazine, which is devoting five pages to the subject in its current (February 9) issue.

Twenty-two cities were invited by the National Municipal League to submit at the Richmond meeting their claims for a place on this "All-America" team. From these the award jury had the difficult task of selecting 11 as the more outstanding examples of progress achieved in community betterment as a result of energetic, purposeful, intelligent citizen effort.

All 22 of the statements presented impressed the jury as meriting special recognition. In addition, therefore, to selecting 11 for the major awards, honorable mention was accorded to the 11 others, here listed:

Corpus Christi, Texas	Hamilton, Ohio
Fair Lawn, N. J.	Lawrence, Mass.
Glendale, Calif.	Norwich, Conn.
Grand Rapids, Mich.	Pittsburgh, Pa.
Greenwich, Conn.	Rome, N. Y.

Toledo, Ohio

The stories, in brief, of the cities that made the "All-America" team are presented in alphabetical order on this and the following pages. De Soto, the smallest city to qualify, is intentionally accorded the greatest amount of space. The "honorable mention" group will tell their stories in THE AMERICAN CITY next month.

Canton, Ohio

CANTON, OHIO, an industrial town having a population of approximately 18,000 people, has had a national reputation for commercialized vice and racketeering. An aroused citizenry, aided by press, radio, and the Citizens Committee for Good Government, gave Canton, starting in 1951, the good administration it needs and deserves.

This concerted effort placed in office officials who have done an outstanding job of cleaning up the unsavory conditions which had prevailed for more than a century. The notorious redlight district was eliminated. Fifty-four federal gambling stamps were turned in. There has been a drug traffic crackdown. The American Social Hygiene Association lauded the cleanup by announcing in November 1952 and in May 1953 that the city had lost its "vice center" tag.

The Safety Director, Stanley Omich, who was appointed by Mayor Carl Wise, was the leader in this cleanup. In February 1953, as a result, he was awarded the United States Junior Chamber of Commerce award for good government. Only four similar awards have ever been given. He was named Canton's outstanding young man in 1952 and the outstanding young man in the State of Ohio the same year.

The Citizens Committee for Good Government has tried to encourage the best men in both political parties to run for office and to encourage more people to vote. The press did a terrific job of alerting the community to the conditions which have prevailed over the years. The radio helped by good news coverage which helped keep the people informed.

This story is not the action by any one individual or any one group. The citizens of Canton have, through their action, given their children and their children's children a cleaner, better place in which to live.

NORMAN H. PETERSON
Citizens Committee for Good Government

Daytona Beach, Florida

DATING FROM 1948, when private citizens formed a Civic Affairs Committee to combat corruption, strong-arm government, and open gambling, Daytona Beach has progressed toward better government through intelligent and energetic citizen action.

First, citizens had themselves named elisors by the State Court and personally conducted raids on gambling establishments which had gone unmolested by elected law officers.

The reform group, defeated at the polls by election frauds, drafted a fraud-proof election law which was passed by the State Legislature. This cleared the way for purging of election rolls.

A last-minute write-in campaign in 1950 gave the reform group a 3-2 majority on the City Commission. Progress was temporarily halted, however, when the reform mayor switched sides and moved to replace an

experienced city manager with a $260 per month clerk at $10,000 per year. Aroused citizens began a recall action which was carried to the Supreme Court and ultimately led to the mayor's resignation.

The reform group succeeded in electing a successor to the deposed mayor, and shortly thereafter, by a 3-2 vote, the Commission named an out-of-state city manager who was professionally trained and experienced. The new manager enlisted further citizen participation in civic affairs through a survey of community needs, a conducted tour by representative citizens of the city's problem areas, open budget meetings, close working with new neighborhood councils, full and open accountability to the public on all city affairs and active citizen participation in development of a city plan.

Today, citizens of Daytona Beach no longer feel "there is nothing we can do about our political situation." They know their own strength.

The reform administration is moving forward on two fronts, getting on a sound financial footing and catching up on accumulating needs for improvements. Virtually all employees are now under the protection of civil service regulations and have received overdue salary increases. The Commission is in the process of refunding water and sewer bonds to permit rehabilitation of the run-down water and sewer systems. The first full budget year for the reform group began with a $138,000 deficit and $175,000 of unpaid bills. Despite generally improved services, now provided on an impartial basis, the fiscal year ended with $66,000 available surplus and bills currently paid.

The new civic consciousness and citizens' active participation in government have provided an atmosphere described by one business leader as "like a breath of fresh air."

THOMAS T. COBB
Citizens Committee

De Soto, Missouri

OF THE 22 CITIES entered in the All-America Cities Contest from all over the country, De Soto, with a population of about 5,000, is by far the smallest. Our little town had many problems. There was no civic pride and few city improvements. Worst of all, statistics showed that De Soto was losing almost 30% of its young people to other communities. We were faced with a mathematical certainty of doom, unless something dramatic was done to reverse the trend.

In January 1953, after four months' work, the students from our high school submitted a report in a contest sponsored by the Union Electric Company of Missouri. This report pointed out our strength and weaknesses, our assets and liabilities, and made precise recommendations as to what the students thought should be done to improve our town. The report won the first prize of $750 over reports submitted by some 27 other Missouri schools.

As a result of this report an adult group was organized, called the Planned Progress Program. All organizations in the city—79 of them, from bridge clubs to labor unions—were invited to be represented on this central group. When organized, the group was subdivided into five major committees and three organizational committees. Each of these committees invited a teenager of the city to participate directly in its work. Thus the teenagers were completely integrated into the entire movement.

The first problem faced by the group was the lack of pride in the city. Something had to be done to show the people of De Soto that they could work together and pull De Soto up by its very boot straps.

As the year 1953 was the 150th birthday of De Soto, it was decided to celebrate our sesquicentennial by putting on a huge program to attract thousands of people to this city and to show the citizens that they themselves could do great things. A pageant was put on, and 420 people, all volunteers and amateurs, were in the cast. Hundreds of others participated in committees, building crews, as solicitors, and as souvenir salesmen. Other hundreds left De Soto in small and large groups for weeks before the sesquicentennial, and traveled around the countryside dressed up in their old-time costumes, to advertise our great birthday celebration.

The program was a tremendous success. It was estimated that 25,000 people saw De Soto on parade on her 150th anniversary. Also, it resulted in a profit of about $3,500—this on a program designed not for profit, but to develop civic pride.

This sesquicentennial celebration showed citizens of De Soto what they could do if they would but work and pull together. For example:

- We now have a full-time man working at our parks, maintaining the equipment and keeping the grass and shrubbery trimmed and cut. De Soto now has a park system that we believe to be second to none for a town of 5,000 people.
- Our town needed a new fire house, but couldn't afford it. To meet this the citizens volunteered again and built a fire house with contributed labor at a cost to the city of only $3,000. The building is 1,500 square feet, and is one of the finest in rural Missouri.
- A Little League Baseball Club was organized. Also, our industries formed industrial softball teams, to offer recreation to their employees.
- The traffic and parking committee of the Planned Progress Program made a complete survey of the town. They made many important recommendations to the City Council which were enacted into law. This committee also contacted property owners near Main Street that owned open lots, and induced many of them to convert those lots into off-Main Street parking lots. A Public Service Committee of the Planned Progress Program surveyed the sewer and water systems of De Soto and made many fine recommendations. During the entire program hundreds of before-and-after pictures were made of all the improvements in order to dramatize what was going on in De Soto to the citizens.
- A civil defense group was formed, with an auxiliary fire and police organization and a Junior Auxiliary Police Department consisting of 55 young boys. This organization meets two nights a week—one for training, and one for gym. The Senior Auxiliary Police Department contributed over 1,100 man-hours during the sesquicentennial in directing traffic and patroling the crowds that attended.
- Other organizations got into the spirit and participated wholeheartedly. The year 1953 found the greatest expansion program in the churches that the City of De Soto has known. Over 25% of our businesses have carried on extensive programs of remodeling. Industries also participated actively in the entire program.

While the citizens were carrying on such energetic and ambitious programs, our city government was not idle. The year 1953 saw our street-lighting system vastly improved. Over 2½ miles of white-way lights were installed in De Soto, and the total wattage used for street lights in the city was doubled. Our City Hall was completely remodeled, inside and out, several new offices being added. A stone veneer was put on the outside of the offices to tie in the new fire house with the old City Hall and make it appear as one new modern building.

De Soto is a city built on hills, and before 1953 had a large percentage of gravel streets. Every time it rained the gravel from these streets washed into the valleys, cluttering our gutters and blocking entrances

onto our paved streets. In order to provide a better street system, 80 blocks of streets were black-topped during 1953. Over 1,400 citizens aided the city in carrying out this improvement. As a result, De Soto was able to lay very high-grade black-top streets for 40 cents per front foot. This price was approximately one-half of what commercial bidders thought it would cost.

Over 50% of our citizens participated in various improvements for De Soto during the year, and we plan on such participation to continue. We now have definite signs that our youth are more happy in De Soto; that they desire to stay and work and raise their families and participate in their city and take pride that they grand move?

As a result of our huge citizen participation and the consequent savings in the year 1953, the city taxes in De Soto were reduced 30% to a low of 70 cents per hundred valuation for general revenue. We challenge any city in the country to match this, our record—the De Soto story.

JEREMIAH NIXON, *President*
Planned Progress Executive Committee

Flint, Michigan

PRIOR TO 8:29 P.M. June 8, 1953, Flint was a growing industrial city nestled peacefully in east central Michigan. Its 1940 population of 151,543 had increased to an estimated 177,000 in 1953.

At 8:29 p.m. a disastrous tornado ripped through the north area of Flint, killing 116 people, injuring many more, and affecting directly or indirectly 600 families. Property damage amounted to millions of dollars, and an area of Flint one block and a half wide across the north end was wiped out.

After the immediate rescue operations and clearing, a lethargy developed for several weeks; thus the unfortunate victims found themselves facing the tremendous rebuilding job alone.

Then quite spontaneously an idea was born. Why not organize an old-fashioned Building Bee, open up the heartstrings, obtain materials, food, effort, manpower, and help all these unfortunate victims rebuild in one grand move?

That is exactly what Flint did. With the help of some 44 civic, welfare, business, and labor organizations, the citizens of the stricken city formed the Central Committee Operation Tornado, Temporary. Among the active leaders were the right Reverend Henry Berkemeier, Pastor of the St. Francis of Assisi Catholic Church; M. R. Borgman of Colonial Homes Co., a builder; Donald L. Benscotter, a sales executive of the Burroughs Corporation. Since the project was unique, no help or guidance was sought or received from national organizations.

On each of two days, Saturday and Sunday, August 29 and 30, with temperatures in the high nineties, more than 7,800 persons contributed time, materials, and effort. Five thousand persons at one time on two successive days worked toward the rebuilding of the tornado-devasted area.

To date, more than 100,000 man-hours, together with materials, know-how and skill, have been donated toward the rebuilding of 193 homes for victims.

This was citizen action at its highest degree. By their actions, the citizens of the City of Flint have become symbolic wherever humanity helps its fallen brothers. Because of this supreme example of mass compassion, the once-stricken Beecher Area of Flint is today the community that friendship rebuilt.

JAMES RUSH
Flint Junior Chamber of Commerce

Park Forest, Illinois

PARK FOREST, a brand-new city in Chicagoland, now has a population of 20,000 and a fine Township High School serving the community and the surrounding area of Rich Township. In the "pioneer" days of 1950 and 1951, virtually everyone was in agreement about the need for new elementary schools. Not so when it came to a high school for Rich Township! Many of the older residents—mostly farmers and residents of the small neighboring villages of Matteson, Richton Park, and Olympia Fields—resented the newcomers and the problems they created.

The situation was complicated by the fact that 40% of the new village was in nearby Bloom Township, necessitating a special "change of boundary." About 50 volunteers took a house-to-house census of an area with 5,000 residents. Petitions were circulated and filed in the record time of 10 days. The district boundaries were settled in the Spring of 1951, and the school bond election was scheduled for June 23.

In Park Forest 105 citizens volunteered to get out the vote. The result in Park Forest: the largest vote in village history and a majority of more than 99%. This overwhelming support more than offset opposition in the remainder of the district and accounted for a 4 to 1 over-all victory.

Before the bonds could be sold, new state legislation dissolved the district on the grounds that it was not operating a school. Again, local citizens came forward. An injunction was secured in the Circuit Court. The case was fought through the Illinois Supreme Court in record time. The higher court upheld the validity of the school district. This made it possible to sell bonds in the spring of 1952 and to begin construction of the new school that fall.

At this time a new volunteer committee of 100 lay citizens, sponsored by the Board of Education, led the way in planning the type of educational program wanted for the teenagers of this district, and in making recommendations as to the kind of High School building and staff needed to carry out such a program.

The committee's first step was to circulate a questionnaire which invited thousands of family groups to tell the Board of Education what they wanted the school to *be* and to *do*. Members of major subcommittees on curriculum studied all sorts of educational materials, visited other schools, and conferred with leading educational consultants.

Results indicated that the original bond issue would not provide the facilities desired. Accordingly, news bulletins were prepared and distributed, town meetings scheduled, and a referendum held April 12, 1952, made available a total of $1,600,000 for the new school. House-to-house work, speeches and publicity by the citizens' committee resulted, for the first time, in a favorable vote in *every precinct*.

With the immediate task accomplished and construction under way, the citizens did not rest on their

laurels. Since November 1952 a well-organized citizens' committee of a permanent nature has dedicated itself to the improvement of educational service within the district. On September 14, 1953, the doors opened for 500 high-school students in a modern, functional building housing a competent faculty and offering a curriculum tailored to local needs. *All this was made possible through the organized efforts of* 292 *lay citizens, spending* 6,590 *hours on behalf of the school.* Volunteers are still doing yeoman service as a representative advisory body. The soundness and effectiveness of local school planning and operating policy is thus insured.

JAMES M. PATTERSON
Board of Education
Rich Township High School

Peoria, Illinois

LED by a nonpartisan organization, Peorians for Council-Manager (PCM) citizens went to the polls in January 1952 and voted two to one to replace their 107-year-old form of government with the efficient council-manager plan. Realizing that the plan would need capable and sympathetic leadership, PCM sought out and supported a full slate in the first candidate election, in the spring of 1953. Six of the nine PCM candidates (total field, 54) were elected.

In its first meeting, the new council knocked $23,000 worth of political padding off the yearly payroll . . . then went to work enforcing the laws. Total fines and parking income suddenly jumped 52%. Next step was the hiring of George E. Bean, currently president of the International City Managers' Association, to administer city affairs.

In its first few months, the new administration routed gambling and put vice on the run with 35 raids on entrenched Peoria brothels. Council authorized a $285,000 bond issue to pay a pile of bills, some of them three years old.

With the retirement of other debts and improved city services as objectives, new cigarette and wheel taxes were enacted. A local business college dean contributed a comprehensive job classification and wage-scale study. Outdated city equipment had to move over for 23 new city vehicles, including 11 police cars and 5 street department trucks.

Peoria's governmental renaissance is well on its way.

BYRON DE HAAN

Petersburg, Virginia

LIKE A GREAT MANY of our cities during the depression years and the war years following, Petersburg could not carry on a comprehensive program of municipal improvements, and had accumulated a great reservoir of community needs. The city government, recognizing the great need for a new and modern hospital facility, in 1949, created a Hospital Authority, composed of nine prominent business and professional men. After consultation and careful planning, a community campaign was organized and carried on with so much enthusiasm that the financial goal of $800,000, by public subscription, was exceeded by more than 80%. Thirteen thousand people, a number greater than one-third of all the men, women, and children living in the city, subscribed a total of $1,449,761, and, as of November 1, 1953, $1,287,085 of these pledges has been paid.

The tremendous enthusiasm generated by this highly successful community effort proved to be a reawakening of community spirit and interest, and, from the closing date of this campaign, the city has marched forward, not only to the completion and occupancy, on January 15, 1953, of a $3,176,000, 180-bed hospital, but the city government, backed by citizen cooperation, the support of the press, radio, churches, and civic groups, has completed:

A $1,000,000 Negro high school
A $500,000 white elementary school
A $100,000 fire station in the central business district
A $250,000 Farm Market Center
Water plant improvements costing more than $200,000

A Planning Commission, with the aid of a consulting engineering firm, has completed a long-range comprehensive plan for orderly city development.

- A seven-member Traffic Commission has been created and engaged in a traffic study. It has provided off-street parking lots to accommodate approximately 500 cars, adopted a one-way street plan, and taken many other steps to alleviate the critical traffic problem.
- A Recreational Advisory Board has been created, and its study and recommendations have resulted in the employment of a full-time recreational director and staff who carry on a year-round recreational program.
- In addition to a 50-man paid fire department, a volunteer compnay of 50 men has been organized and fully equipped to supplement the regular department.
- A group of citizens, with city participation, acquired what was known as Centre Hill Mansion and grounds, and has converted it into a museum in which is housed one of the finest collections of Civil War relics in the country.
- A group, known as the Southside Emergency Crew, composed entirely of volunteer personnel, is completely equipped for rendering first-aid and emergency service, and answers calls 24 hours a day.
- Ten active garden clubs, with approximately 350 enthusiastic members, are continuously engaged in carrying on many projects of city beautification.
- There is a citizen Welfare Advisory Board, composed of 21 members, which coordinates the city welfare program.

We believe that Petersburg (1950 population 35,054) stands second to no other city of comparable size in this significant fact—in the last 3-year period the city operated within its budget and with a surplus of $600,000. During this period the city completed approximately $5,500,000 in capital improvements with a net debt increase of only $1,000,000 and with its legal debt margin unimpaired.

Second to the hospital project, in the way of citizen participation, stands our civil defense organization job:

- Since January 1, 1951, more than 1,100 citizens have volunteered for training and service in the civil defense program.
- Trained in this program have been 125 auxiliary police, 146 auxiliary firemen, 101 first-aid and 91 home-nursing personnel, and 37 nurses' aides. Three hundred thirty-seven civil-defense meetings have been held, 206 lectures given, and 5,767 letters mailed. Ten civil-defense films have had 187 showings.
- Emergency hospital locations have been established throughout the city as well as first-aid stations, housing and kitchen service, and also an emergency morgue.
- Three siren stations are located in strategic positions throughout the city. Three radio transmitters are maintained. Sixty-five airplane spotters have been trained, and a post is manned 45 hours per week.
- Emergency communications are maintained between Fort

Lee, Hopewell, Richmond, and the nearby federal reformatory, and trial tests frequently made.

- Trained personnel of Petersburg have cooperated with all surrounding areas in organizing fire-control services.
- The civil-defense organization has also aided in the Red Cross Blood Donor campaign, through which program 3,414 pints of blood have been supplied for the Blood Bank.
- This entire civil-defense program has been carried on with no paid personnel, and the City of Petersburg has borne the entire expenses incurred.

Petersburg, with active citizen participation, is marching forward. New and more modern buildings are replacing outmoded structures in the central business district. New homes, new churches, new schools, and new highways are being built. New industry and commerce are being attracted to furnish employment for its people. Petersburg is growing, perhaps not spectacularly, but with vigor, order, and economic stability.

ALEXANDER HAMILTON, JR.
Attorney

Port Angeles, Washington

PORT ANGELES is a town of approximately 12,000 on the shore of Washington State's Olympic peninsula—a town that literally woke itself up when the citizens went to work!

A new council-manager government was installed when citizen groups, led by the local Municipal League, took to the stump to explain wherever possible the merits of this type of city administration.

Continuous door-to-door canvassing by PTA members and a Citizens Advisory Committee to the School Board through the post-war years paid off in an expanded school plant that is at present the only one in Washington State completely caught up with the increased post-war school enrollment.

Volunteer work parties met for a year and a half to remodel an old hospital building into a modern YMCA. Over 2,000 people worked on the project. Every hour of labor was volunteered, every piece of material was given free or purchased at cost. The Y was furnished by donations from local organizations.

A system of arterial streets was paved through the efforts of a volunteer City Planning Commission and citizen committees who persuaded their neighbors to tax themselves so they could come out of the mud and drive on concrete.

The whole community area was studied through a series of town meetings. For a period of seven months, citizens met weekly to discuss reports compiled by citizen research committees on the community's Boundary, Health, People, Community Organizations, Churches, Government, Social Agencies, Economic Development, Recreation, Beautification, Education, Library, and History. Every report was discussed in small discussion groups which made recommendations for action in each field.

As a result, citizens took a complete community census; led a successful "Back to Church" campaign on the three Sundays following Easter; finished remodeling an old fire hall into a Children's Hall for delinquent or abandoned children, and furnished it in one day; painted a zigzag ramp, a community eyesore, doing the job in an hour before a Town Meeting; cleaned up the county children's camp in another work day; gave a community barbecue for 2,000, followed by a mass meeting, and formed a transportation committee to survey transport difficulties, the main deterrent to the town's economic progress. Other long-range projects are continuing through the coordinating efforts of a permanent Community Action Assembly.

JAMES C. FRITZ
Community Action Assembly

Richmond, California

THE STORY of intelligent citizen action in Richmond is the story of this city's entire post-war development. Eight years of tireless citizen action has been in force—determined to "Build a Better Richmond."

Following World War II, Richmond was tagged the "problem city" of the nation. Her sudden wartime growth—necessary to build one-fifth of the entire merchant marine fleet—exploded an avalanche of problems upon the city. Aroused citizens started to make big plans for their "city of the future." Each year since has seen some dramatic achievement but none so great as 1953.

For 1953 saw the culmination of many citizen accomplishments of community betterment, some of which took years to achieve:

- A citizens' group — committee of 100 — put in a model council-manager plan of city government by revising the City Charter—and defeated a strong effort to establish a "ward" system. Over 10,000 signatures of registered voters were procured in five days' time to qualify the proposed charter change for the ballot.
- The "spoils" system was eliminated by the adoption of personnel rules backed by another charter amendment.
- Still another charter amendment terminated a dangerously unsound general pension system—saving an estimated million dollars.
- A $72,000,000 bridge from Richmond across San Francisco Bay was realized—construction is now under way.
- A campaign for the adoption of a charter amendment authorizing an off-street parking bond issue was successful.
- A twelve-man delegation of citizens flew to Washington to get the government to expedite the return of government land to private interests for industrial promotion purposes. The trip was successful.
- A determined group of citizens—meeting with city, county, and state officials—routed out rampant vice conditions in a neighboring unincorporated area, in accordance with Richmond's reputation for being one of the cleanest cities in America.
- A citizens' committee provided active leadership in a housing relocation program connected with city redevelopment —over 1,700 families were moved without disturbance to the community.
- Local citizens established a nonprofit industrial development corporation to attract new industry and to provide jobs for residents.
- Since the war's end—and the abandonment of the four United States Maritime Richmond Shipyards (peak wartime work force of over 96,000)—more than 90 new diversified industries have located here.
- A committee of citizens put over two large bond issues—one for a county office building—the other for a major road program.
- The League of Women Voters entertained foreign visitors to our city. Also, the League provided factual information enabling our Council to discontinue rent control.

For this outstanding citizen effort, Richmond received international as well as national recognition. The High Commissioner of Germany and the United States

Department of State selected Richmond to be documented by film to show the people of war-torn Europe how an American city, through citizen action and against great odds, solved its own post-war problems. Filmed in 1953 — using local citizens — the title was: "The Story of Richmond." In addition, representatives from Japan, Germany, and other foreign lands and American cities came to study our city.

Richmond citizens say they are only beginning. They claim Richmond's greatest chapters lie ahead. Their inspired leadership leaves no doubt that they will continue to "Build a Better Richmond."

DANA MURDOCK

Scranton, Pennsylvania

THE SCRANTON PLAN is an industrial rehabilitation program covering the Lackawanna Valley in northeastern Pennsylvania. Now with a population of a quarter-million — long primarily supported by the mining, preparation, and transportation of anthracite coal—a community program is unfolding to replace mining with industry. This program has enlisted the support of management, labor, governmental authorities, the clergy, civic leaders, and a host of other people vitally concerned about the future.

Government and national industrial development observers attribute the success of the "Scranton Story" to two major factors. First, a community must be "hard hit" by economic adversity to take up the fight to come back. Few communities were so hard hit as Scranton and the hard-coal region. A comparative example is the fact that in 1930 there were 40,000 miner workers in the area, with between 10,000 and 20,000 others directly dependent on mining, while today there are but 8,500 miners here.

The other point is the caliber of leadership present at the head of the Scranton program. All the big men in the community have taken the region's problems to themselves, as personal problems, and have come up with answers in the same manner that they confront their own business or personal situations.

On the physical side, 23 community plants were built. About 6,600 workers are employed in these plants alone, with a potential of somewhere about 19,000. They represent an annual payroll of some $23,000,000. In addition, the attractiveness of our labor surplus has brought another 7,500 jobs and more than $100,000,000 in new construction. Payrolls here will amount to $60,000,000 in 1954.

Community after community come to study our "Scranton Story" with the hope that they may apply its successful principles to their own economic situation.

We are happy to cooperate with these communities, for we have already assured ourselves that through sound community action areas temporarily blighted by economic adversity can come back in the best American tradition of free enterprise without the aid and control of our federal and various state governments. We believe that it was this spirit that gained for Scranton selection as one of the 22 most outstanding cities in the All-America Cities Awards.

BERNIE BLIER
Public Relations Director
Scranton Chamber of Commerce

Shreveport, Louisiana

SHREVEPORT, in population, business, and industry, has grown during the last ten years quite comparably with other major cities in the Southwest. Many needed attainments on the cultural, spiritual, and educational side of living called for cooperation of the general citizenship far above the average.

It was back in 1944 that the first Citizens' Committee for study of public schools in the parish was undertaken. It resulted in a $6,500,000 school-building program, a training program for teachers, and additional compensation for the teachers of the public schools.

In 1946 a broad program of public works' improvement was launched by the city government with the cooperation of citizens' committees, resulting in the voting of $10,000,000 in bonds for additions to the city sewage and drainage system, its streets, garbage and trash disposal, traffic control, fire department buildings, recreational programs, including new swimming pools, water works improvement, and a new Class 5 airport.

Next the citizenship tackled the problem of a new Home-Rule Charter for the city by constitutional amendment and confirmation vote by the citizens of Shreveport, all of which was finally completed on November 14, 1950. There followed another study of the school system of Caddo Parish, which this time brought in a group of specialists from George Peabody College in Nashville, Tenn. This survey was completed in 1950. A number of recommendations have already been put into practice, including a $20,000,000 school-building program now under way.

City-Parish Long-Range Plan

Another citizenship action brought about the adoption of a comprehensive city-parish long-range plan, with the employment during 1953 of a consultant to work on a three-year contract, financing of which is participated in by the City, Parish, School Board, City Planning Commission, and Chamber of Commerce.

The problem of meeting the growing cost of city government was studied by a Citizens' Committee appointed in 1951, whose recommendations were adopted by the City Administration. Other citizen-action programs included the forming of the Public Appeals Review Board and the institution of Business-Education Days over the past three years, in which businessmen and teachers have exchanged visits to each other's facilities for better understanding.

On the spiritual side has been the forming of some 400 prayer groups in the city, made up largely of teenagers. It is through this movement that a downtown chapel was furnished in Shreveport's newest office building by public subscription.

One of the outstanding citizens'-action programs has been a survey of the Negro community, which was submitted by the Chamber of Commerce as Shreveport's entry in the All-America Cities award contest. The survey, begun in 1949, was completed in November 1952 after three years of work by approximately 1,000 volunteer white and Negro workers, in which facts were obtained about 42,000 Negro people living in the Shreveport community. These facts will be used by a permanent interracial organization, set up to carry out the recommendations of this report.

HAROLD J. BRYANT
General Manager
Shreveport Chamber of Commerce

It is estimated that a savings of $40 per day is realized by the city's owning its Elliotte vacuum leaf-loading equipment.

Mayor Sexton (left) and council are on hand when the old street sweeper moves out of the picture to give way to the new.

Watch the Nickels

. . . to get a bigger dollar's worth of street maintenance and construction

By BERNARD CASELLA
Superintendent of Streets
Leavenworth, Kans.

LEAVENWORTH, Kans., always has enough money to build good streets, but not a nickel to waste. The city does not hesitate to spend money, or rather invest it in good equipment, if it will pay off in better streets.

Leavenworth, in northeastern Kansas, has a population of 22,000. Its street system consists of the usual wide assortment of types of surfacing. By classification, they include:

	Miles
Asphalt on concrete base	8¾
Asphalt on brick base	10½
Brick on concrete base	11¼
Concrete	8½
Penetration asphalt on macadam	15
Asphalt on rock	23
Rock	29
Total	106

In addition, the city has approximately 75 miles of alleys, most of which are rock surfaced, and 47 miles of sanitary sewers. The exact number of storm sewers is not known. All this construction, the Department of Streets and Public Improvements must maintain and keeu in good functioning order.

Prior to 1949, streets were in such bad shape that they became a major campaign issue. The present administration came into power on the promise that it would rebuild these badly rutted, poorly surfaced streets.

To rehabilitate any street laid on the rich farming soil around Leavenworth, rock is needed. When well-graded rock is worked into the loam in proper quantities, it produces a stabilized base that does a fine job of carrying traffic. At a cost of $2.40 per ton for rock, the quantity we required would have expended our entire street budget and yet would have cared for only about one-fourth of the streets needing surfacing.

We, therefore, purchased a 16-acre tract of land outside the town which contained a good vein of rock. The city then bonded itself to purchase a $20,000 rock-crushing plant. This equipment included an 18- by 24-inch Cedar Rapids primary jaw crusher and feeder, and an 8-inch by 36-inch Universal secondary jaw crusher; a Cedar Rapids vibrator screen; two Case and one Minneapolis-Moline engines for power units; two Baughman belt conveyors; one Chicago Pneumatic air compressor with a capacity of 105 cubic feet per minute; and one Ingersoll-Rand wagon drill. The city owned a Caterpillar D-4

Storm-sewer pipe of small diameters have been successfully constructed by Leavenworth, Kans., for the past three years.

The water and street departments teamed up to acquire this hand truck-crane. The air compressor also sees much action.

crawler tractor with a Traxcavator shovel that was used at the quarry until 1952 when it was replaced by a similar unit of larger size.

With this equipment, we have produced an average of 17,000 cubic yards of rock per year at an operating cost of only 64 cents per cubic yard. Thus, we have, each year, not only saved enough to pay for the equipment but have made possible a return of nearly $20,000 on the investment. In three years, we have surfaced, with new rock, all the streets and alleys needing it, and have built up a stock of three sizes of 6,000 tons of rock at the quarry.

To build a base on our newly graded streets, we spread rock that is no larger than 1¾ inches in size. For streets needing additional rock for maintenance purposes, the size of the rock is reduced to 1 inch. When used for cover material on asphalt streets, the maximum size of the rock is ½ inch.

In addition to acquiring a supply of material, we had to re-equip the department. We purchased:

1 Caterpillar No. 12 motor grader
1 Case tractor with a Hough loader
1 6-foot sheep's-foot roller
1 Lincoln 200-amp welder with cutting torches
12 trucks

The equipment on hand included:

1 manual street-painting machine
1 Austin-Western rooter
1 5- to 8-ton Buffalo-Springfield roller
2 pull-type graders
1 two-wheeled tar kettle
1 1937 Diamond T truck and asphalt distributor
1 Caterpillar D-4 tractor with Traxcavator shovel
1 1937 Austin-Western sweeper
1 1,000-gallon Etnyre street flusher
7 trucks

Later, we expanded our street department with still more equipment:

1 Model 40 Austin-Western sweeper
1 Hi-Way chip spreader
1 Flexible Sewer Rod sewer-cleaning rig
2 snow plows
1 Elliotte vacuum leaf loader
1 Martin Carryhaul trailer
1 Model 3 Athey force-feed loader
1 Pitman Hydra-Lift crane, truck-mounted
1 3½-S Rex mixer
1 4-foot Mall chain saw
2 Century tailgate aggregate spreaders
1 1,500-gallon Etnyre flusher
1 McConnaughay asphalt mixer
1 Tarco Scotchman salt spreader
1 Mall concrete vibrator
1 LeRoi air compressor, trailer-mounted
4 trucks

Our Pitman Hydra-Lift truck crane was acquired jointly with the water department. We have used it to lay hundreds of feet of storm sewer, to unload carloads of water pipe, to move concrete, brick, dirt, logs, and free stumps. The gear is simple to operate; a man has learned its operation in 30 minutes.

Contract Work

We restrict the work of the street department to maintenance operations and minor construction work. For major construction — concrete streets and thoroughfares carrying heavy traffic — we award contracts.

In lightly traveled areas, we grade and roll the streets with the sheep's-foot and rubber-tired rollers, working as much of the large-sized crushed rock into the subgrade as is possible. Water is then sprinkled to bring the subgrade to a firm density. We apply a light, cutback asphalt and cover the surface with the finely sized crushed rock.

Last September, we opened six blocks of streets, making cuts up to 6 feet deep, using our Caterpillar grader to cut and windrow the earth

This small, portable heat-mix plant and roller team up to make one of the busiest combinations as well as one of the most efficient in Leavenworth's street department.

and our Athey loader to pick it up. Both pieces of equipment performed this operation easily.

We use our McConnaughay pug-mixer extensively. This machine prepares 3 cubic feet of hot-mixed asphalt for surfacing per batch. We have mixed thousands of yards of material with this rig in the past two years which our Buffalo-Springfield tandem roller has compacted to create a good riding surface. For this operation we have found an asphalt emulsion most successful.

Street-Sweeping

Our new Austin-Western street sweeper does double duty in keeping our streets clean and helping with street construction. The sweeper functions 8 to 12 hours per day, almost all the year. Every paved street in the city is swept at least once every two weeks. Fortunately, we have a number of lots needing fill material, so the debris-filled hopper of the sweeper has a short haul to these disposal points. The sweeper also picks up excess gravel from the streets that have been treated with asphalt. This salvaged material is stockpiled and reused.

Picking up leaves is an interesting procedure. Originally, the public was prohibited from raking leaves into the street. However, since we have acquired our Elliotte vacuum leaf loader, we have allowed the raking of leaves into the streets. By picking them up ourselves, we eliminate the fire hazards of the past. Moreover, we are able to sell the leaves to nurseries for $3 per load. This method saves us $40 per day when compared to the former manual leaf pick-ups.

Snow removal is a task that falls to the same equipment. We use our Caterpillar motor grader, Adams grader, and Athey loader to windrow the snow and pick it up. We clear about 53 blocks of downtown streets completely and open the remaining streets to traffic.

The care of this equipment requires a good operating base. The old street-department garage was inadequate, in poor repair, and had a low ceiling that prevented half of the equipment from entering the building. Consequently, we erected a new structure according to our own specifications, using our own crew. We now have the opportunity to provide work for the men on rainy days and other periods when the whole crew could not otherwise be employed to good advantage.

We built three structures. Our well-lighted shop building measures 40 feet wide and 100 feet long. There is a separate room in each corner of the building: one for oil storage, for parts storage, an office, and one for showers and lockers.

The second structure is the truck-storage building, also made of concrete blocks, measuring 172 feet long, 29 feet wide, and 12 feet deep. The third is the tool building, 20 feet wide by 40 feet long and 12 feet high. Part of the tool shed is set aside to make brooms for our sweeper and to store sewer supplies. Our garage and truck buildings are enclosed with a 6-foot-high Cyclone fence. We also have a separate maintenance shed for storing salt, sand, and gravel that provides space enough to park some of the equipment.

Sewer Pipe

For the past three years, we have constructed most of the pipe needed for storm sewers, particularly in the smaller diameters. We have five pipe forms, ranging from 18 to 36 inches in diameter which have been supplied by the Quinn Pipe Form Company. One man is assigned to this task during the summer months. He uses a Rex 3½-S mixer and the Mall vibrator to mix and place the concrete.

Two-Way Radio Important

Another important aid to keeping all this equipment operating smoothly is the two-way radio. The primary unit is located at the city garage and is connected with the police department transmitter. One unit is located in the superintendent's car, and others are in various trucks. We have a total of nine Motorola transmitters in the city and plan to obtain more. The value of this two-way radio is immeasurable.

This program has been accomplished with the support of the mayor and street commissioner. The fact that Commissioner Julius E. Kaaz has been in the contracting business for 40 years is an asset to the department, for his policy has been that money spent has to pay dividends. We have had all the money we have needed, but not one nickel to waste.

Birmingham Approves Large Bond Issues

ON DECEMBER 15, voters of Birmingham, Ala., passed seven bond issues totaling $16,075,000 for city improvements. The bond issue receiving strongest public support was for schools, an issue amounting to $10,500,000 for expansion and improvements.

Although funds for schools have not been finally allocated, among projects planned by the Birmingham Board of Education are a new high school for Negroes in the eastern section of the city and several new elementary schools. Improvements in present buildings are also planned.

Other bond issues voted on were: $125,000 for a new fire station; $2,000,000 for street improvements; $500,000 for increased library facilities; $250,000 for park improvements; $2,500,000 for sewers in recently annexed sections of the city; and $200,000 to complete the agricultural exhibit building at the Fair Grounds. Of these, the agricultural building received least public support.

Birmingham's Committee of 100, located at 1914 Sixth Avenue, North, aided in mobilizing public support for the various bond issues.

Heavy Oil Fuels Diesel Plant

Cheap fuel and a new diesel of 3,500 horsepower have succeeded in cutting costs at the electric plant at Murray, Utah

AN IMPROVEMENT PROGRAM, featuring the use of heavy oil and the installation of a 3,500-hp diesel, has cut $50,000 from the operating expenses of the municipal electric plant at Murray, Utah.

Rising fuel-oil costs in recent years prompted the conversion of the city's diesel-electric plant to heavy fuel oil. The change was made possible with the help of the nearby refinery of Standard Oil of California that has developed a Grade 5 fuel oil to replace the more expensive Grade 2 diesel fuel. The No. 5 oil costs only 5.8 cents per gallon compared to 10.8 cents for No. 2 diesel fuel.

Fuel Delivery

The heavy fuel oil is delivered hot by truck directly from the refinery and is placed in either an underground tank that holds 38,000 gallons for imediate use, or in a surface storage tank of 100,000 gallons capacity. Hot water from the engine manifolds is circulated through the oil storage tanks to maintain a high temperature. Electric heating rods are also used when needed.

The fuel oil is filtered, purified, and electrically heated to 160° F. as it proceeds to the engines where it is again filtered before injection into the cylinders. During the first year of operation, some difficulty was experienced with injection-nozzle failure on the older engines. Though the savings in fuel costs more than offset the cost of nozzle replacements, the nuisance and lost time made it imperative that a solution be found.

Filtering

Through efforts of the refinery, the oil composition was altered slightly and better filtering was achieved at the plant. Since these changes were made, two years ago, no further difficulty has been encountered except that the plant is now harder to keep clean. Nozzle replacements are at a minimum.

The fuel oil, as supplied, has a high-heat value of 147,300 BTU per gallon and a sulphur content of 1.2%. The high sulphur content necessitates the use of heavy-duty detergent lubricating oil in the crankcase of the engine as well as in the cylinder lubricators. No engine wear has developed which may be attributed to the heavy fuel oil. Lubricating oil consumption is slightly higher than it was with lighter fuel.

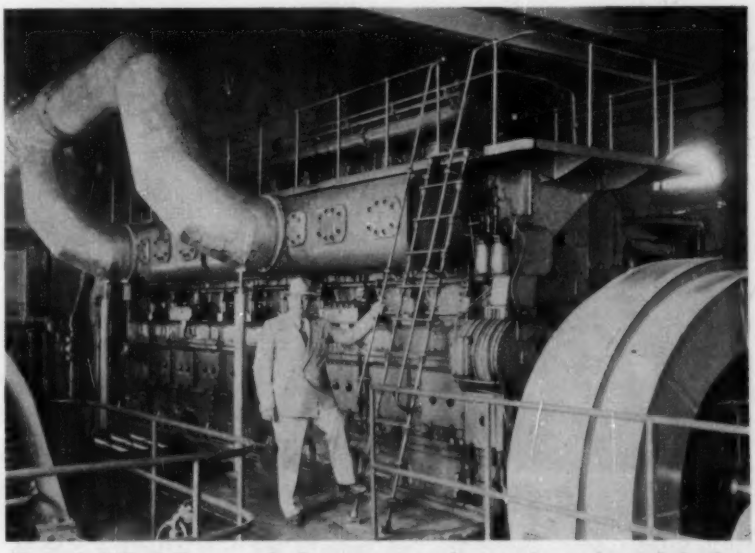
Murray's power supply includes the diesel-electric plant, an 800-kw, low-head hydro plant that is located in the foothills of the nearby Wasatch Mountains, and an emergency power connection with Utah Power and Light.

Of five diesel units, four are currently in use. The newest unit, a 3,500-hp, 10-cylinder Fairbanks-Morse diesel, was put on the line in June 1952. It was purchased with the understanding that Grade 5 fuel oil would be used. This arrangement has not caused any operating difficulties. The oldest unit in the plant dates from 1927, a 6-cylinder, 675-hp, air-injection Fulton diesel that is used for emergency service only.

Low Operating Cost

A 6-cylinder Fairbanks-Morse diesel, rated at 840-hp, was installed in 1937; and, in 1948, two 8-cylinder, 1,645-hp Worthington diesels were added. A total of 4,850 kw is now available at the diesel plant without the air-injection unit.

The hydro develops full loads only during the summer run-off. In winter, when the peak load occurs, it is available for only about 300 kw. During the year, it will develop about 20 to 25% of the power generated, and, of course, at a low operating cost.



Mayor J. Clifford Hansen, a leading proponent of conversion to heavy fuel oil, is pictured beside the Fairbanks-Morse generating unit that was installed in July 1952.

MPR

The City Tells Its Story

Edited by PAN DODD WHEELER
Executive Director, Government Public Relations Association

Richmond and New Orleans Conferees Agree— Official-Citizen Relations Are Vital to City

EDUCATING CITIZENS seen as only means to help keep down corruption" . . . "Key to good public relations is adequate service to the people" . . . "City governments told to stress human side of their activities" . . . "Citizens will take an interest in subjects that are real to them" . . . "Every city needs a public relations program." These are headlines from newspapers and periodicals covering two recent meetings of city government officials and citizen leaders of the United States. The headlines indicate the preoccupation of both the National Municipal League's Richmond Conference and the Government Public Relations Association's New Orleans meeting (with the American Municipal Association) in municipal public relations.

Mayor Delesseps S. Morrison of New Orleans told the GPRA meeting that "every city needs a public relations department or official, whether they know it or not. "I'm glad we know it in New Orleans . . . and have such a department." The difference between "good men with good intentions who get nothing done and those with good intentions who are able to accomplish their aims," he said, may well be the "public relations department which plans and executes a program of education and explanation."

Tell the People

Mayor Morrison, recent winner of the 1953 LaGuardia Memorial Award for effective government administration, warned that "good deeds alone do not talk for themselves," and that the city must use some method to "tell the city's story to people." A unique means of doing this in New Orleans, the Mayor explained, is the Thursday afternoon bus tours for citizens. The tours are conducted by the Mayor and by Public Relations Officer Dave McGuire and consist of visits to spots in the city where public works projects are located or are in progress. Asked how he could spare so much time for the guided tours, Mayor Morrison replied: "These tours are one of the important activities of my week. The people not only learn about their city from Dave or me . . . but we learn from them: what they think, what they need, and what they want."

The key to good public relations, Hayes Richardson, of Kansas City, Mo., believes, is "adequate service to the people." But the director of welfare and chairman of the city's public relations committee told delegates in both Richmond and New Orleans, that "services must be explained and talked about." He said that the city must show people how citizens "fit into a program" and what a program means to them "in concrete, citizen terms."

Mr. Richardson described the Kansas City Community Councils in which citizens participate on a neighborhood basis to effect improvements in their city. His assistant, Mrs. Harold Marshall, who writes scripts for Kansas City's weekly TV program, urged that cities using television "tell their story in an absolutely honest way" and keep scripts "real, professional, and entertaining."

Community Workers

While Kansas City does not have a PR department as such, it employs the community workers who organize and direct the neighborhood councils. Both Mr. Richardson and Mrs. Marshall devote their energies to various PR activities, and for one day each week the city employs a professional television producer, to insure a city TV show of high professional quality.

Mrs. Lee Jaffe, the director of pub-

The "Silver Anvil," awarded annually by the American Public Relations Association for outstanding public relations performance, is recognized in the lobby of New Orlean's International House by two former recipients: Mrs. Lee K. Jaffe, Director of Public Relations for the Port of New York Authority, and (right), Harold F. Schneidman, Chief, Bureau of Public Information of Philadelphia. Eric Carlson of THE AMERICAN CITY looks on.

lic relations for The Port of New York Authority, believes that she accomplishes most for her organization when she works, "frankly . . . as a public relations director." The spectacular success of the Jaffe-directed effort to secure citizen support for new facilities at the Newark airport was accomplished, Mrs. Jaffe reported in New Orleans, by direct contact between her and the citizen groups and individual leaders in the Newark area.

"Policy Voice Is Important"

Important to effective PR operation, Mrs. Jaffe said, is that the public relations officer have a "policy voice" or be in a position to effect policy through others.

A roving editor for *Reader's Digest*, Karl Detzer of Leland, Mich., panel chairman in Richmond, pointed out that "people are human beings . . . they are not interested in the 'form' of government . . . they are interested in other people, in personalities who are doing things dramatically."

Mr. Detzer said he was not suggesting that things be done "just for dramatic impact" but rather that city officials accomplish what needs to be done with a flair for the dramatic . . . with an understanding of what attracts the interest and support of human beings.

How the media and principles of public relations were utilized for 250 cities in Tennessee was the story told by Executive Secretary H. J. Bingham of the Tennessee Municipal League to the GPRA group.

The League was concerned not only with attracting the support of every city official but also that of individual citizens in urban communities. Mr. Bingham said the League utilized newspapers, radio and TV presentations, brochures, booklets, reports, letters, and citizen organizations to win a share of state gasoline revenues for cities in the state and to secure a favorable popular vote on eight amendments to the 1870 Tennessee Constitution.

The "right" of the cities' point of view in both instances "did not make it so," Secretary Bingham emphasized. "We had to explain, educate, urge, inform, and then explain some more," he said.

Hail to "New Model PRO"

Newspaper people still look on PRO's "with suspicion," according to Joseph Kelly, of the Pawtucket bureau, *Rhode Island Journal*. But Mrs. Pan Dodd Wheeler, executive director of the Government Public Relations Association, pointed out in Richmond that Mr. Kelly was talking about "the old-school press agent" who is, she said, "a very different person from the 1954 public relations official" whose job is not to "cover up" but to help newspapers and other media "uncover" both good and bad from city hall. She said that in cities where this "professional" new-type PRO is operating, newspapers and other information media have come to respect the work of the municipal public relations official.

Mayor Morrison of New Orleans (center, seated) poses with public relations officials (seated, left to right): Floyd Burrow, President, Tennessee Municipal League; Hayes Richardson, of Kansas City, Mo.; Mrs. Lee K. Jaffe, Port of New York Authority; Mayor Morrison; Mrs. Pan Dodd Wheeler, GPRA Executive Director; C. K. Priest, Newport Beach, Calif., and Alex Pilch, of Dearborn, Mich. Standing are (left to right): Alfred Willoughby, Executive Director of the National Municipal League; Dave McGuire of New Orleans; Maxwell Nathan, of Dayton, Ohio; Eric Carlson, Associate Editor, THE AMERICAN CITY; Harold F. Schneidman, Philadelphia; J. Wiley Bowers, Executive Secretary, Tennessee Valley Public Power Association; Clifford Hill, of Burbank, Calif., and J. D. Zatman, of the Maryland-National Capital Park and Planning Commission.

The Broadcaster Can Also Serve

Thad Brown, of the National Association of Radio and Television Broadcasters, stated that "no one in a community is more interested in good government than the broadcaster . . . whose very existence depends on stable but progressive activity in the community." Mr. Brown urged city officials and citizen groups to utilize the facilities of local broadcasters . . . but warned that the city must use these facilities with "intelligence and some understanding of the media."

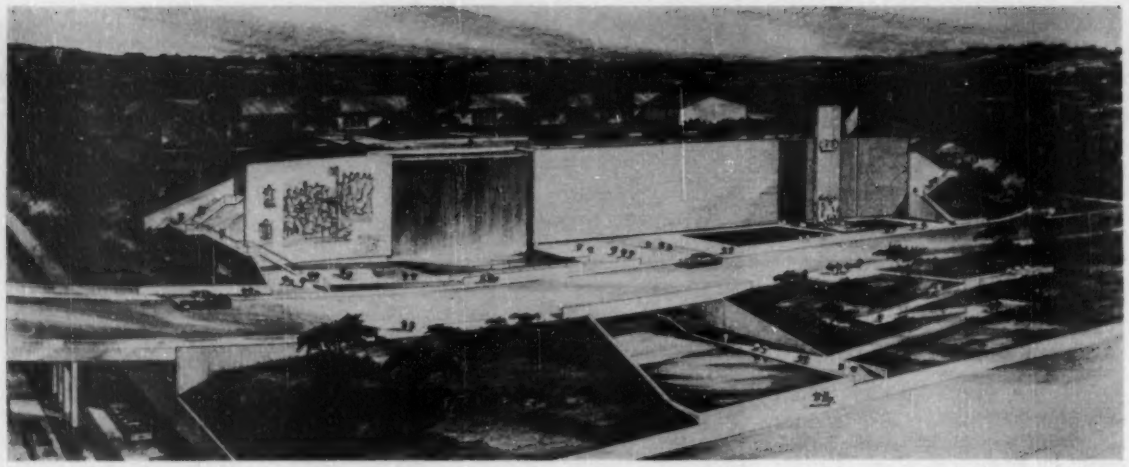
From these selected statements of participants in the National Municipal League conference in Richmond and the GPRA-AMA meeting in New Orleans, some general conclusions can be developed.

Public relations is the management function which evaluates public attitudes, identifies policies and procedures of the government with the public interest, and executes a program of action to earn public understanding and active concern.

When properly directed by competent public relations professionals who have the confidence of policy-making officials, the municipal public relations program can pave the way for progressive governmental activities, can win the approval of and thus utilize the most alert PR media, and can serve as a two-way channel —through which citizens may make known their will and through which citizen opinion may be shaped.

A Key to Good Government

Both in Richmond, where citizen groups were featured, and in New Orleans, which was a meeting of city officials, it was agreed that "citizen cooperation" is a key to good government and that the relations between the citizen and city hall—municipal public relations—are, therefore, of primary importance.



The buildings shown in this drawing at the rear of and above the Fort Moore Pioneer Memorial retaining wall are the headquarters of the Los Angeles City School District Board of Education. The main portion includes the Los Angeles City Hall, the Hall of Justice, the Hall of Records, the County Law Library, and the California State Building. Buildings remaining to be constructed are a new county courthouse, additional state buildings, a city health center, a water and power department building, and a county administration building. A city police administration building is under construction.

Unity of Purpose Becomes Unity of Action in

Unique Pioneer Memorial Project

By JOHN ANSON FORD, *Chairman*
Board of Supervisors
County of Los Angeles, Calif.

WHEN LOCAL GOVERNMENTS in metropolitan Los Angeles decided to combine utilitarianism and a justifiable historical pride by covering the bare face of a cliff with a retaining wall, which would also be a noteworthy historical monument, these governments accomplished considerably more than merely to turn a slab of concrete into a thing of beauty.

The Idea

The idea of giving historical significance to a retaining wall was laid before local officials in 1949 by three Los Angeles ladies who appeared before the County Board of Supervisors and asked that the historical significance of a downtown area known as Fort Moore Hill be honored as having been the site of the raising of the first American flag in what is now the City of Los Angeles, on July 4, 1847, shortly before California was admitted to the Union.

At the time of this discussion, local agencies of government were preparing to remove part of Fort Moore Hill, which lies at the north end of the Los Angeles Civic Center, to make way for a variety of public improvements, including construction of a portion of the Hollywood Freeway, the removal of two obsolete traffic tunnels under the hill, and the extension of several streets in the vicinity.

As the process of reducing the area of the hill would leave a sizable piece of steep earthen wall on the east side of the elevation and adjacent to several permanent hilltop structures housing the City Board of Education, local governmental engineering authorities knew that a concrete retaining wall would be necessary at this location.

I proposed that the wall be erected as a memorial to the early American pioneers. An ornamental waterfall, sculptural embellishments depicting the community's pioneer era, and a flagpole and pylon were features incorporated into the design of the memorial.

Because the development of a modern civic center in Los Angeles included plans for buildings to house offices of a variety of governmental agencies, the Board of Supervisors decided to seek financial assistance from several of these agencies in carrying out the undertaking.

Meetings were arranged with the City Council, the Board of Commissioners of the Municipal Department of Water and Power, and the City Board of Education. Following several periods of discussion, each of these agencies agreed to join with the County of Los Angeles in financing the undertaking.

A Community Project

Although primarily a county project, the City Council and the Board of Education allocated $80,000 each, and the Department of Water and Power $70,000. Subsequently, the county augmented its contribution

with additional substantial contributions.

In addition, local officials are seeking the cooperation of several interested private organization in financing certain embellishments, including the projected pylon near the west end.

Among these groups is a Mormon organization, whose history is closely tied in with the history of Fort Moore Hill; the Native Sons and Native Daughters of the Golden West; the historical Society of Southern California, and a century-old Masonic lodge in the area.

Architectural Competition

On orders of the Board of Supervisors, a memorial advisory committee was formed, composed of interested private citizens and representing the cooperating agencies of local government. In 1950 this group sponsored an architectural competition to obtain the best possible design for the memorial, the contest to be carried out in accordance with standard procedure approved by the American Institute of Architects.

Next, a jury of awards was named under the supervision of the local chapter of the American Institute of Architects. On this jury were such well-known experts as Wellborn Root, of Chicago; Gardner A. Dailey, of San Francisco; Eero Saarinen, of Cranbrook Academy, near Detroit; Professor Albert Stewart, sculptor, on the Scripps College faculty at Claremont, Calif., and Neil Petree, Los Angeles civic leader. H. Roy Kelley, of the A.I.A., acted as professional advisor.

In addition, a committee of consultants reviewed the historical and sculptural requirements for the project. On this committee were Professor Stewart, Dr. Glenn S. Dumke, of Occidental College in Los Angeles, and Arthur Woodward, at that time curator of history at the Los Angeles County Museum.

Prize-Winning Design

After several months of careful work by these groups, winners of the design award were announced. They were Kazumi Adachi and Dike Nagano of Los Angeles. These young men are of Japanese ancestry and are American citizens. The former is a graduate of the University of Southern California, and the latter of Yale University. They were awarded a first prize of $4,000, and an architectural contract for the project, at an additional remuneration of $16,000. Subsequently, following the receipt by the Board of Supervisors of competitive bids for construction of the project, a contract for the undertaking was awarded on June 23, 1953, to M. J. Brock and Sons, the low bidders for $373,887.

Groundbreaking for the construction was held on July 13, 1953. Representatives of all organizations involved were present, together with representative school children.

Participating officials explained that the memorial wall could include three large frescoes depicting important events in Los Angeles history and that, included in the huge backdrop, would be a curtain of water 50 feet high and 85 feet wide, falling into a pool at the base. The pool, approximately 80 feet wide, and 60 feet long, would be divided in the center by a foot bridge.

The water drop, it was further explained, had been designed as a slide rather than a fall, so that the water coming over would form a smooth sheet with a minimum of turbulence. Two easy stairways would extend from Hill Street, at the base of the monument, to Fort Moore Place at the top, and the retaining wall would be nearly 400 feet long and 45 feet high.

Completion Scheduled for 1954

Completion of the monument is scheduled for 1954. Already preliminary thought is being given by local officials to a suitable dedicatory ceremony. Along just what lines this will develop is not yet known, but one thing is certain: those responsible for the administration of county, city, and public education in the County and City of Los Angeles have demonstrated that when unity of purpose controls public officials at any level of government, unity of action becomes possible.

Rehabilitation Drives Make Progress

A RECENT SURVEY of the Build America Better Council, an off-shoot of the National Association of Real Estate Boards, reports that 173 cities of 226 cities surveyed are now engaged in full, or partial, programs for enforcement of local laws on housing standards. Reportedly, more than 69,000 dwelling units have been brought up to city ordinance standards, and 8,300 units unfit for rehabilitation have been demolished.

In citing the work accomplished by the Council, headed by Fritz B. Burns of Los Angeles, the NAREB president, Charles B. Shattuck, pointed to the need for complete neighborhood conservation programs, which would include, in addition to ordinance enforcement:

1. Systematic public improvements to schools, streets, parks, sewers, and to municipal refuse collection, traffic, and other facilities.
2. Replanning, rezoning, and replatting of cleared and long-vacant sites in connection with street closing and widening for healthier, more livable, attractive, and convenient neighborhood environment.
3. Acquisition and removal of structures and uses of land which obstruct the carrying out of a neighborhood conservation program.
4. Attracting investment in new construction, as well as in substantial modernization, within neighborhood conservation areas.

"In order to carry out such programs," Mr. Shattuck said, "cities need additional powers in law enforcement, in acquiring property or portions of uses of properties, and in levying benefit assessments. They also need the cooperation of the federal government in allowing tax incentives to investment of new capital in older areas that are being given a new environment through neighborhood conservation."

Needed: Ideas and Perseverance

TO ACCOMPLISH THE MOST for local government, one must have a considerable faith in the long-run effectiveness of good ideas and sound planning. The present cities are full of examples of ideas brought to fruition by perseverance. Chicago's lake-front development is a case in point. The municipal hodgepodge that dominates the American municipal scene today can be ended by similar good ideas and similar perseverance. Even the political leaders who champion the status quo will find more peaceful sleep when some of their unsolved problems disappear in unified community action.

FRANK P. ZEIDLER
Mayor of Milwaukee, Wis.

Purchasing Policies

of the City of Pampa, Texas

THESE ARE the purchasing policies which I prepared for the City of Pampa, Texas, and which were approved by our City Commission. They will fit most cities with a population under 50,000 and could do a fair job for cities over that population bracket. I might add that I also prepared the purchasing policies for the City of Austin, Texas, in 1949 while working as Purchasing Agent for the city.

B. H. CRUCE, ***City Manager Pampa, Texas***

---

1. *Authority for Purchases.* — All supplies, materials, and equipment purchased for the City of Pampa, Texas, both emergency and regular purchases, are subject to the approval of the City Manager. All purchases shall have the approval of the Purchasing Agent appointed by the City Manager.

2. *Emergency Purchases.*—Emergency purchases of less than $25 may be purchased by the department head or an employee under procedures worked out with the Purchasing Agent. All purchases of over $25 shall be made on approved purchase-order forms.

3. *Accounting Instructions.* — Requisitions, purchase orders (regular and emergency), and receiving reports must be properly signed in order to account for and facilitate the payment of city purchases.

4. *List of Those Authorized to Make Emergency Purchases.* — The Purchasing Agent shall keep an up-to-date list of all employees in the various departments who are authorized to make emergency purchases.

5. *Certification of Necessity and Funds.* — The department head shall certify that all purchases are necessary for the proper operation of his department, and that funds for same are available in the current budget. No purchase shall be made except those normally included in the city's General Budget without the approval of the City Manager.

6. *Who Requisitions Purchases.*—The Purchasing Agent shall purchase only those supplies, materials, and equipment requested by a using department. He should, however, keep the department heads informed on price changes, deliveries and other information that would be in the interest of good municipal operations.

7. *Preference to Local Dealers.*—In the purchasing of supplies, materials, and equipment for the city's requirements, preference shall be given those dealers having stores or warehouses within the City of Pampa, price, quality, and delivery being equal.

8. *Rotation of Purchases.* — Purchases for the city shall be distributed or rotated among the various merchants regularly handling or stocking such merchandise, price, quality, delivery, and service being equal.

9. *Routing of Purchases.*—In purchases from out-of-city suppliers, the Purchasing Agent or the City Manager shall route delivery in such manner as would be to the best interest of the City of Pampa.

10. *Contract Supplies.*—If the Purchasing Agent has contracted for the purchase of certain supplies and materials, the same shall be procured only from the authorized contractor unless the Purchasing Agent himself gives permission to secure the commodities elsewhere.

11. *Quotations.* — On purchases of over $100 but less than $2,000 the Purchasing Agent shall request quotations or telephone bids from three or more suppliers, if possible, and shall purchase on the lowest and best quotation unless otherwise approved by the City Manager.

12. *Sealed Bids.*—On purchases of over $2,000, the City Manager shall advertise for sealed bids to be opened and read at a certain date. The opening date shall not be less than 14 days after the first advertisement. Purchases shall be made by the City Commission.

13. *Specifications.* — The preparation of specifications for supplies, materials, and equipment must not be unduly restrictive but so written that the city can obtain at least three competitive bids.

14. *Quality, Who Sets.* — Each department head shall have the right to request those goods or services for his department that are, in his opinion, the best interest of the City of Pampa.

15. *F.O.B. Pampa.* — All bids and quotations shall request that goods be priced f.o.b. Pampa, Texas.

16. *Federal Excise Tax.*—The City of Pampa is exempt from the payment of taxes imposed by the federal government and suppliers should be requested to deduct the amount of such taxes from their bids, quotations, and invoices.

17. *Federal Transportation Tax.* — The 3% federal excise tax on transportation is not applicable if goods are shipped transportation charges collect with the charges allowed. If savings can be extended the city by shipping in this way, it should be requested.

18. *Standardization Requirements.* —Important economies can be effected through standardizing supplies and materials that can be purchased in large amounts and stored in the warehouse; thus, department heads should adopt as standards the minimum number of qualities, sizes, and varieties of commodities consistent with successful operation.

19. *Payment of Invoices.* — The Purchasing Agent shall approve for payment only those invoices that are in agreement with the purchase order.

20. *Inspection of Deliveries.* — No supplies or materials or equipment shall be accepted for payment until received and inspected by an authorized city employee.

21. *Disposal of Surplus Supplies.* —All supplies, materials, and equipment disposed of by sale or otherwise shall be by the Purchasing Agent upon the advice and consent of the City Manager.

22. *Correspondence with Suppliers.*—Copies of all correspondence with suppliers concerning prices, ad-

justments, defective merchandise shall be forwarded to the Purchasing Agent. All invoices, bills of lading, delivery tickets and other papers pertaining to purchases shall be sent to the Purchasing Agent.

23. *Claims.*—The Purchasing Agent shall prosecute all claims for shortages, breakage, or other claims against either shipper or carrier in connection with any shipment.

24. *Public Inspection of Records.*—The Purchasing Agent shall keep a complete record of all quotations, bids, and purchase orders, and such records shall be open to the public inspection.

25.—*Petty-Cash Purchases.* — Employees making purchases of $1, or less, in instances where an immediate cash payment is required or from business firms that do not normally carry an account of the City of Pampa shall be reimbursed by the Purchasing Agent or at the water office by submitting an approved sales ticket for such purchases.

New Film on Urban Rebuilding

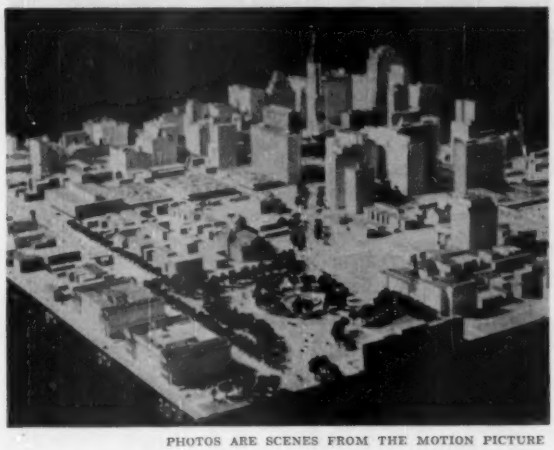
THE LIVING CITY, a new 16mm documentary film produced by Encyclopedia Britannica Films and the Twentieth Century Fund, has been released for public showings following previews in New York, Chicago, and Washington.

The 24-minute film shows what American citizens can do to make their cities what they want them to be by replacing and renewing outworn neighborhoods. It is based on a new Twentieth Century Fund study on urban renewal and city planning by Miles Colean, and was recently published by the Fund. (See page 122 of the November 1953 issue of THE AMERICAN CITY.)

The camera takes the viewer to scenes of blight and deterioration in several large cities. The characters in the film struggle with problems created by traffic congestion, run-down areas of substandard dwellings, false and inflated values assigned to deteriorated property, and other difficulties of assembling tracts of land for redevelopment. Animated sequences help the narrator to depict the problems raised by the rings of suburbs that have grown up around nearly all major cities.

Scenes filmed in Baltimore, Los Angeles, Chicago, Pittsburgh, and Philadelphia show the viewer what citizens in these cities have been able to do once they have agreed on what it is they want. A typical sequence shows the Baltimore Plan at work, with its coordinated attack on slum clearing.

"The Living City" is now available through the country-wide offices of Encyclopedia Britannica Films at a sales price of $112.50, and a rental fee of $4.50. Headquarters address of Encyclopedia Britannica Films is Wilmette, Ill.



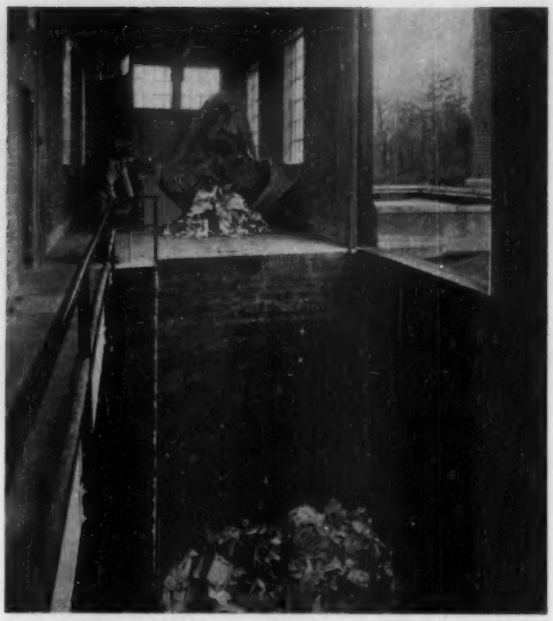
PHOTOS ARE SCENES FROM THE MOTION PICTURE "THE LIVING CITY"

Planning model in Philadelphia. **"How our cities develop . . . depends on us, the people who live in cities—for our cities will always be what we make them."**

Slum demolition in Chicago. **"Cities are dynamic, ever-changing—they have a cycle of growth, decay, renewal."**

Run-down shopping district. **"Maybe this is getting to be a tough neighborhood. All my friends are moving out."**

Brookline, Mass., has built its incinerator close to attractive resident areas and so far has received no complaints.



With the furnace placed on the center line of the pit's long axis, a monorail crane that is controlled only by push buttons can feed the hoppers without the need for skilled operators. For contrast, see the illustration on the opposite page.

Incinerator Design

A discussion of the site and general plant arrangement

By WILLIAM S. FOSTER, *Engineering Editor*
THE AMERICAN CITY

FORTUNATELY, the word is gradually getting around: The municipal incinerator, as built today, is more than a useful servant and guardian of a community's sanitary health; it is also a good neighbor when built correctly. The idea, that an incinerator is a leprous blight, fundamentally unclean, and must be tolerated out of pure charity and need, but should be avoided, is unfounded when even a moderate amount of intelligence is used in an incinerator's design and operation. An inspection of existing plants would quickly prove this point.

Take, for example, one old campaigner in Rockville Centre, N. Y., a floor-dump, hand-stoked incinerator that requires a hand shovel to remove the residue. Yet Superintendent Robert Woodcock has been operating the plant so well that an entire community has been built up around it and a popular playground adjoins the site.

Take, also, for example, the little incinerator in Darien, Conn., a suburban community with high and exacting standards. This plant is located in the geometric center of the municipality. Yet Town Engineer Walter Bates has operated it without complaint for 10 years in what many would consider an adverse location.

Go to Brookline, Mass., another suburban community with exacting municipal standards, and inspect an incinerator that Town Engineer Walter Devine has built within 100 yards of fine, substantial homes. The building combines not only sound engineering but also imaginative architecture and landscaping that transforms the structure into a parklike improvement.

Journey to Hempstead, N. Y., and see a plant that has been built without the conventional towering stacks and designed on such clean, refreshing lines that it is usually mistaken for a school. In New Rochelle, N. Y., is an incinerator, built in 1938, that is situated on the edge of a fine golf course and is directly opposite a prosperous and well-kept residential section.

Visit the incinerator in the historic Georgetown section of Washington, D. C., and you will be convinced that ugly remarks could never justifiably be applied to this sturdy municipal improvement.

Neither design nor operation of these plants can be haphazard. To avoid this danger, let us try to trace

some of the landmarks that lead to the goal of a good neighbor.

To start with, provide for your incinerator a site large enough to permit all the trucks that may arrive at the plant simultaneously to get well off the streets. People understandably object to a visible concentration of trucks on their streets. Even the most casual traffic studies emphasize the importance of off-street unloading.

The next important point is to clearly evaluate the city's refuse. At one time, designers considered refuse to be a mixture containing 65% organic garbage and 35% other rubbish. Today, the popularity of packaged foods has eliminated much of the waste that the housewife used to throw into the garbage can. Moveover, the advent of the kitchen garbage grinder is also reducing the volume of organic garbage. In Washington, D. C., Superintendent of Sanitation W. A. Xanten finds that garbage now constitutes only 5% of the total refuse production. In the Los Angeles area, a study showed that refuse consists of 7% garbage by volume, or about 16% by weight.

Nevertheless, an incinerator still must be rugged enough to receive a load of moist, spoiling potatoes or a concentrated mass of wet market wastes when the occasion arises. At the same time, it must be versatile enough to control the intense heat that will be generated in today's refuse containing easily burned material like paper and cardboard cartons.

Refuse Quantities

Next, one must estimate how much refuse an incinerator will have to receive. Generally, the quantity will average between 2 and 2½ pounds per person daily, but may rise as high as 4 pounds. Greeley and Hansen, Chicago consulting engineers, based the design of the Winnipeg, Canada, incinerator on an estimate of 560 pounds of refuse per year per capita. Louisville, Ky., a few years ago, discovered that it was collecting 2.23 pounds of refuse per day per person.

New York City has designed its incinerators to receive refuse at the rate of 2.7 pounds per person per day, and has estimated that it will have a calorific value of 4,000 BTU per pound. All cities, except New York City, exclude ashes from the refuse. However, in New York City, the ash problem is not serious.

Now, let us assume that you know how much refuse you have to collect, and what it is like. What sort of a plant should you build to burn it?

You must first decide how your plant will handle its refuse. This decision results from a choice between the use of a storage pit and crane to charge the furnaces or a direct, floor-charging arrangement. The choice isn't difficult to make.

A storage pit offers your plant greater flexibility of operation. It reduces plant hazards, for rarely does a man fall into a furnace that is charged directly from the floor. In larger plants, rated at 200 tons or more, it also permits you to use smaller furnaces, receive trucks in an orderly procedure, and operate the incinerator on two or more shifts, if desired.

Nevertheless, smaller incinerators, with a capacity of 90 tons or less per 24 hours, are in general floor-dump plants. They are simpler to operate; they require a smaller, less expensive building; they do not add the expense of a crane or a man for operation.

Reduces Furnace Sizes

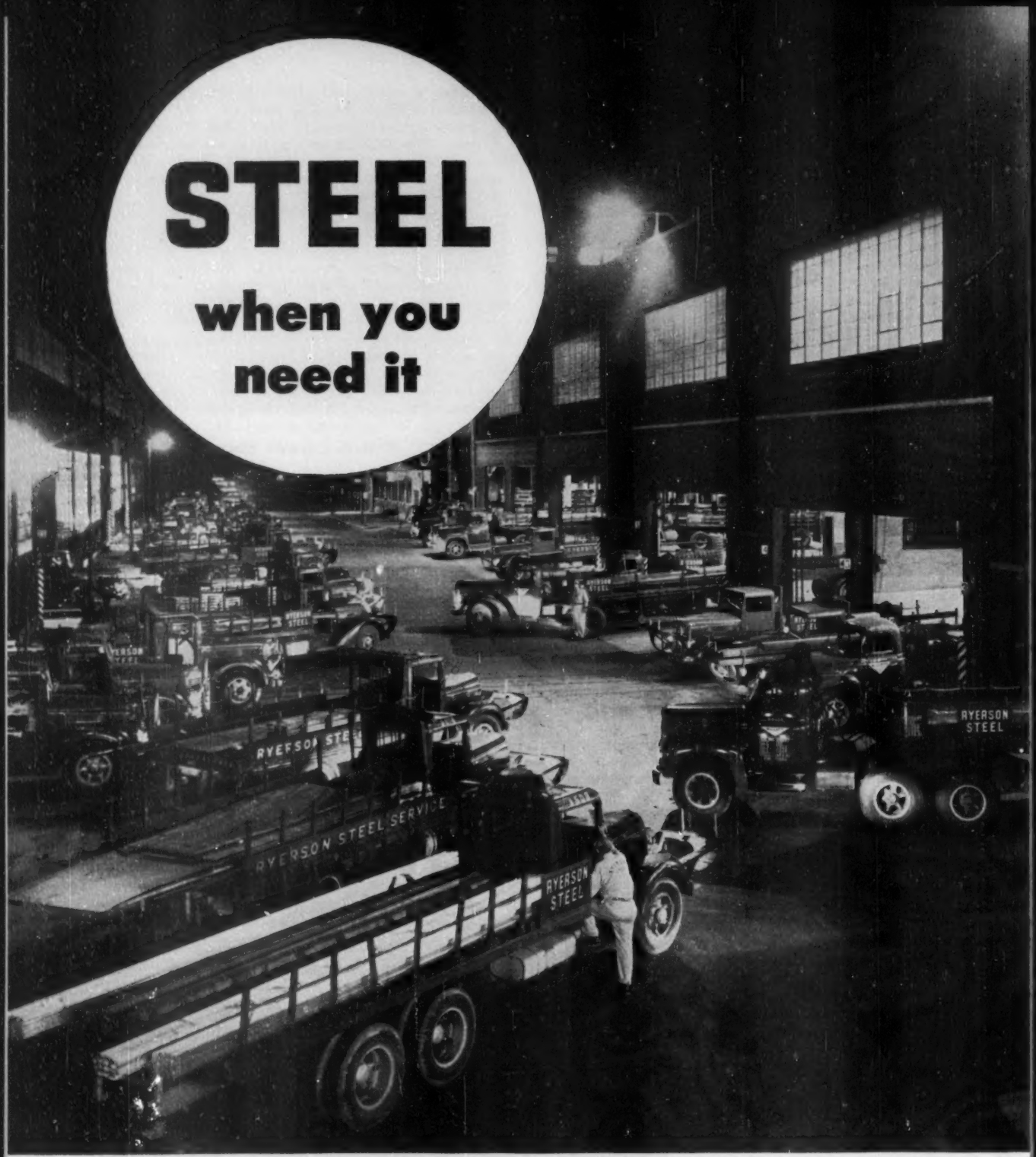
Incinerators are rated in terms of the amount of refuse their furnaces can burn in 24 hours. However, the trucks will arrive at the incinerator on an irregular schedule over a period of five to eight hours. If these trucks deliver, let us say, 50 tons in a six-hour period and you charge the furnaces directly from the floor, then they must operate at the rate of 200 tons per 24 hours.

With a storage pit, the trucks can discharge their loads as soon as they arrive, and the crane operator can transfer the refuse to the furnaces in a more orderly manner. The incinerator can be operated for two shifts or 16 hours. This would mean that the furnaces would have to function at the rate of 75 tons per 24 hours to do the job. Thus, furnaces of less than half the size can be used successfully with a storage pit. Obviously, you can reduce the size ever further if the incinerators operate around the clock.

With the storage-pit design, even smaller plants may have two furnaces, with the pit placed on the long side that adjoins the furnaces. Thus the plant requires a bridge crane that is able to move the bucket in two horizontal directions in order to keep the furnaces charged.

A method of eliminating the expense of a bridge crane and the services of a skilled operator has been developed

A bridge crane and a skilled operator are needed if the long side of the storage pit is adjacent to the feeding hoppers.



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This well-designed modern structure in Hempstead, N. Y., refutes the idea that an incinerator is a blight on the landscape.

by Henry W. Taylor, New York City consulting engineer. Mr. Taylor places the furnaces along the center line of the storage pit's long axis. In this way, if the pit is not excessively wide, a crane on a monorail can take the refuse from the pit to the furnaces. These cranes can be operated by a push button and usually do not require skilled operators.

Mr. Taylor developed an extra refinement of this "straight-line" operation of incinerators at the Darien, Conn., plant. He designed the facilities to handle the incinerator residue with a hydraulic-jetting device that transferred the residue to a storage pit beyond the furnaces. Thus the monorail crane performs two tasks. It not only transfers the refuse from the pit to the furnaces, it can also pick up the residue and place it in a truck for disposal. This avoids the need to make the building deeper so that a truck can drive beneath the residue hopper and unload the residue conveniently.

If the refuse load delivered to the plant is fairly consistent and not subject to unusual fluctuations, and labor costs are high, then a floor-dump plant offers possibilities. Its furnace capacity, rated in tons per 24 hours, probably should be four to five times the anticipated peak daily load.

However, if the volume of refuse has a tendency to vary, increasing with time, and if it is more economical to use extra shifts than to purchase greater furnace capacity, then the crane-and-bin type of design should get the nod. There are no rules of thumb to guide you in these matters. The best way is to take a pencil and a piece of paper and figure them out.

EDITORIAL NOTE: The second and concluding installment will analyze the furnaces themselves and will discuss the important subject of smoke abatement and fly-ash control.

Florida Municipalities Get Technical Aid from Citizens' Group

THE FLORIDA Planning and Zoning Association, a nonprofit state-wide citizens' organization, recently established, has been rendering an increasingly valuable program of service to Florida municipal officials confronted with the problems of rapid community growth.

Since 1953, when the official state program for assistance to communities on planning, zoning, and economic development was terminated, the three-year-old citizens' group, located at Woodville, has enlarged its functions and activities.

The FPZA's first step was to set up an office of its own, with an executive secretary, Frederick H. Bair, Jr., who managed to salvage some of the materials after the abandonment of the official Community Planning Division's program. A circulating technical library was established, which now contains about 6,000 publications. Any member of the FPZA, therefore, can quickly obtain, upon request, published information on community problems.

A second service program established by the FPZA is its technical inquiry service, to which member cities or counties can write for answers to specific questions on planning, zoning, or related matters and subjects.

A third major field of service is a limited consultant assistance program, under which FPZA furnishes field service to members. The limitation of this service is that FPZA will not make master plans, write zoning ordinances, prepare economic development programs, or do other work on a package basis for its members. It will work with local organizations as they develop their own plans or planning controls, and it will furnish technical guidance and assistance on these matters where local people and groups participate fully.

A fourth activity is the publication of a monthly Newsletter which reviews and digests pertinent information on building, planning, and zoning in the state. This is now received by 42 Florida municipalities, and has out-of-state circulation also to interested planning agencies. Subscription charges are $3 per year.

The annual conference of the FPZA is still another feature of key value to municipal officials, with important state-wide problems on subdivision regulations, major highways, and zoning as key items of discussion at the last meeting, held in West Palm Beach, Fla.

Individual membership dues in the FPZA are $3 per year, and organizational membership is $10 per year, exclusive of subscriptions to the Newsletter.

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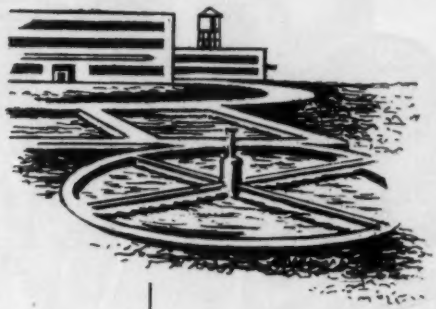

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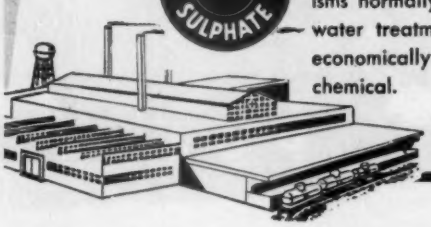

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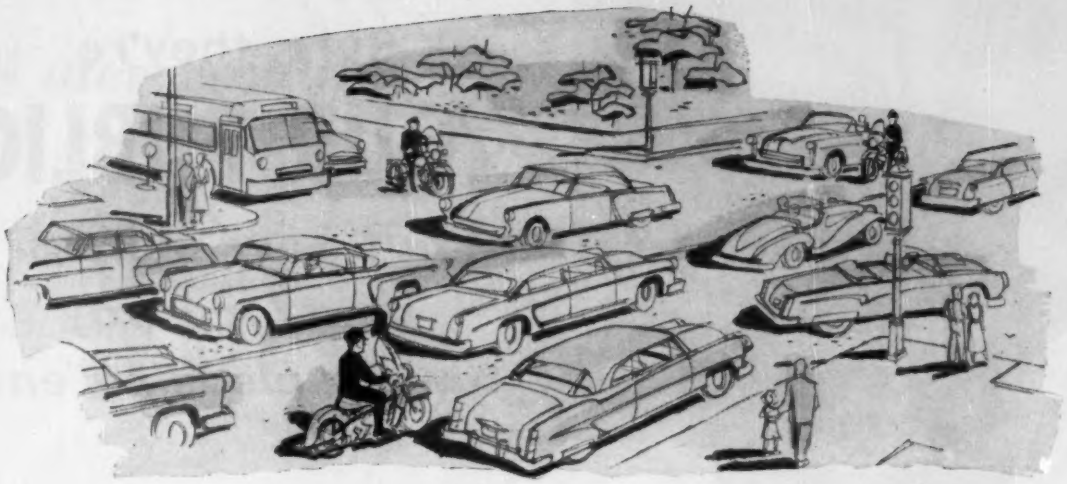

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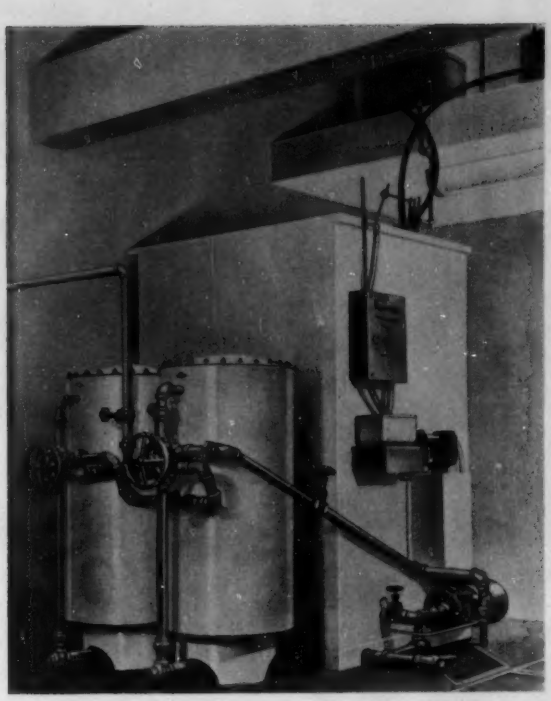
By H. B. SLIGER
and
J. F. BERBERICH
The Permutit Company
New York, N. Y.

A "Package" Water-Treating Plant

for small communities



This self-contained unit has a capacity of 500 gallons per hour and requires only one hour per day of an operator's time.

THE NEEDS of small communities, as far as water quality is concerned, are exactly the same as the requirements of large cities. Everyone, no matter where he lives, wants first a water supply that is perfectly safe to drink at all times and in all seasons. Although safety is the first requirement, it is not the only requirement, for people also want a water that is clear, colorless, pleasant tasting and reasonably soft.

Water Quality

Very few natural water supplies will meet these requirements. Most deep-well waters, no matter how clear they may be, usually contain objectionable amounts of hardness. Many of these waters also contain iron, and some contain manganese.

Surface waters, depending on their location, may or may not contain objectionable amounts of hardness. But all of them contain microorganisms; and most of them have, at times, objectionable amounts of turbidity. Many others have an unattractive yellowish to brownish color. Also, many surface waters, especially in the summer, develop objectionable tastes and odors.

Treating such waters to eliminate their impurities has largely been confined, in the past, to the larger cities. The first equipment used was, of course, the old English or slow sand filters. Later, these were superseded by the American rapid-rate sand filters which provide coagulation and settling ahead of filtration. The latest development was the upflow sludge-blanket type of coagulation and settling equipment. This also precedes filtration and is equally useful for clarification, sterilization, softening, or the removal of iron, manganese, color, tastes, and odors.

To meet the needs of a small community, a package water-conditioning plant has been developed by the Permutit Company. The unit is available in eight different sizes that range, in maximum flow rates, from 500 to 3,300 gallons per hour. Maximum daily capacities vary from 12,000 to 79,200 gallons.

Package Plant

These package units consist of: (1) a precipitator with a built-in clear well, (2) two chemical feeder tanks with proportioning feeder control, (3) inlet float-control valve, (4) one or more neutralizing filters, (5) one or more activated carbon filters, and (6) a service pump.

One of the chemical feeder tanks, equipped with a motor-driven agitator, is used for feeding lime, hypochlorite and, if required, soda ash. The second tank is used for feeding a soluble coagulant such as aluminum sulfate which needs no agitator.

Treatment

The raw water, the flow of which is automatically regulated by a float valve, enters the precipitator mixing zone in back of a sloping partition. A motor-driven agitator mixes the chemicals with the water and forms large particles of floc.

At the bottom of the mixing zone, the treated water flows under the partition and rises through the sludge-filter zone where it is filtered through a blanket of previously formed floc. As the horizontal, cross-sectional area of this zone increases as the section gains height, the vertical velocity of the rising water keeps decreasing during its passage through this zone. A plane, therefore, is reached at which the upward flow is so slow that the water is unable to lift the blanket any fur-

(*Continued on page* 155)

MODERNIZATION ON MAIN STREET, Niles, Michigan, where Monotube street lighting poles have been installed to support new type fluorescent fixtures.

This new Monotube installation combines improved appearance with more efficient, more uniform lighting—3 times as *much* light for Niles' busy Main Street as the former old style units.

Monotubes, backed by unmatched engineering experience, come in modern, continuous-taper designs for *every* street lighting need. For complete-line catalogs with informative data . . . for helpful planning service if you wish . . . write to The Union Metal Manufacturing Company, Canton 5, Ohio.

UNION METAL

Monotube Lighting Poles

Baker, Ore., Lights Its Pavements

By DAVID C. KOESTER
City Manager
Baker, Ore.

Baker, Ore., needed a new street-lighting system—no doubt of that.

How the 15,000-lumen mercurys brought the downtown area to life at night is shown here. The old upright units can be seen as well as the Magee-Hale Park-O-Meters.

THE CITY OF BAKER, OREGON, needed a new street-lighting system—no doubt about that. The old system was a hodgepodge of fixtures and control equipment that had accumulated over the last 30 years.

Many residential areas had no lights at all; and where there were residential lights, they were the old-fashioned open-bulb type, some with reflectors and some without. Downtown lighting consisted of low-mounted incandescent lamps on metal and concrete posts with round glass globes that dissipated light in all directions.

The downtown circuit, served by underground cable, in recent years had caused considerable trouble. In the residential areas, nearly every time the wind blew, lighting circuits would come in contact with high-voltage power lines and scores of bulbs would burn out. One night in late 1952, over 300 lamps burned out in a single night.

It was then that the City Council submitted to the voters the proposition for a bond issue to build a new street-lighting system, for the City of Baker owned the street-lighting system and furnished power for it with its own small hydroelectric generating plant.

A series of meetings was held by the members of the Planning Commission, the City Engineer, the City Manager and lighting specialists and engineers of the General Electric Company, resulting in a city-wide street-lighting plan. Cost estimates placed a figure of $100,000 for a bond election.

The special election was held on April 7, 1953, and voter approval was given for the plan. Detailed design was undertaken by City Engineer John R. Gray. Many design and wiring problems had to be overcome because the new lighting circuits had to be run on power company poles which, in many cases, were already overcrowded. After these details were worked out and all material and equipment needs determined, sealed bids were received on all major equipment. After consideration of all bids, the order for equipment was placed with the General Electric Company. The Carlson Construction Company of Baker, Ore., started the work on August 15 with the contract calling for completion in 120 days.

The New System

The lighting job was town-wide. Downtown streets were lighted by 15,000-lumen, mercury-vapor lamps mounted on 28-foot Pacific Car and Foundry metal poles with 8-foot mast arms. They were placed in a staggered pattern with 4 lights to a block.

Residential lighting called for a light at each intersection mounted on corner poles with a 12-foot mast arm extending into the intersection. Lamps of 2,500-lumens were used in strictly residential areas, while 10,000-lumen lamps were installed near schools, hospitals, and on streets which are used as fire runs. Most of these lamps were placed on existing power company poles and, where no power poles were available, new wood poles were installed by the city. A total of 466 new incandescent luminaires were installed and 93 mercury-vapor luminaires.

The new system is divided into

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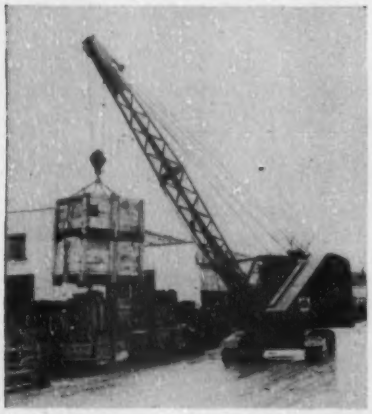
Available with 9 fast-change front-end attachments, the famous job-proved Bantam is available in a wide variety of mounts tailored to your needs.

Write the Schield Bantam Co., 234 Park St., Waverly, Iowa, TODAY. Ask for free literature or a FREE on-your-job demonstration.

Here's a Bantam C-35 Crawler (⅜ cu. yd.) working in soupy mud in Rahway, N. J. Crawler gets on the job — does its work — gets out with ease. Independent swing and travel speeds digging operation without stopping forward movement.



Front-end fitted as a crane, this Bantam Crawler proves its worth for lifting jobs. 94" overall width allows highway travel without permits. Low ground bearing pressure (only 2½ psi with 32" tread) allows safe travel on normal pavement. Lifting capacity — 5 tons.

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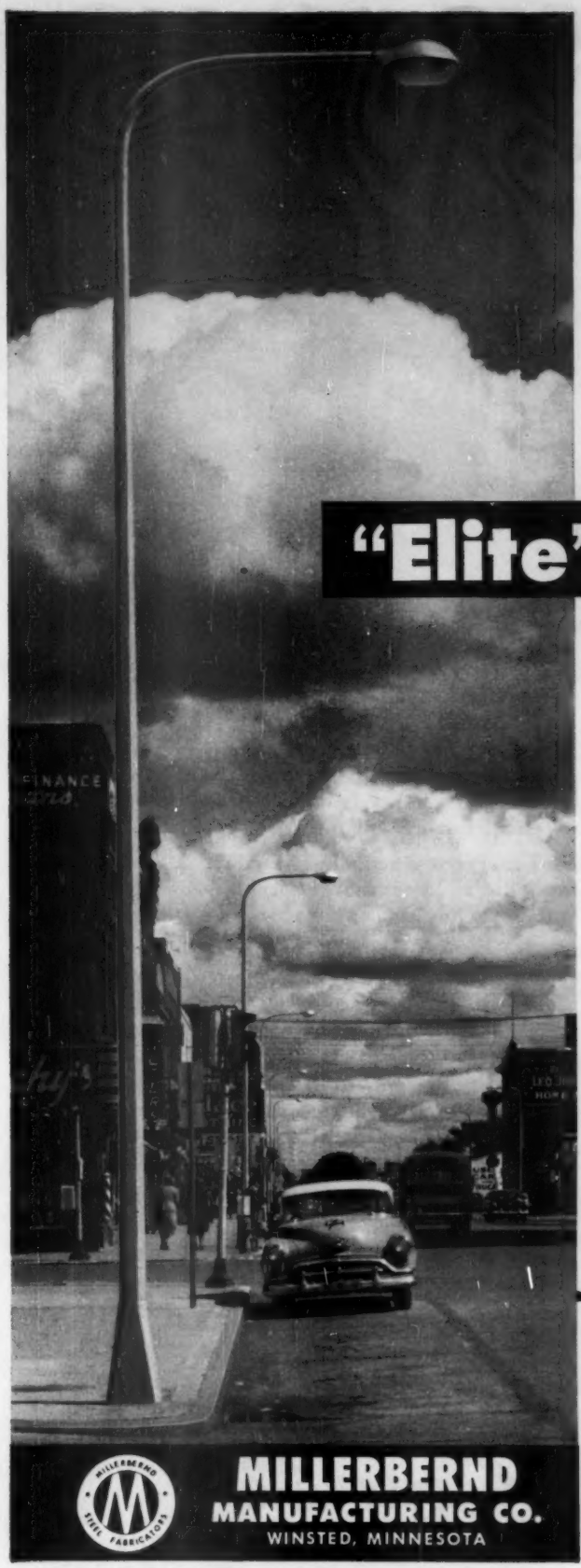

NIGHT into DAY at Moorhead, U.S.A.

"Elite" Octa-Tube

THOROFARE

LIGHTING STANDARDS

by Millerbernd

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Winsted, Minnesota

Please send Bulletin OTA on "Elite" Octa-Tube Lighting Standards, along with features, styles and specifications.

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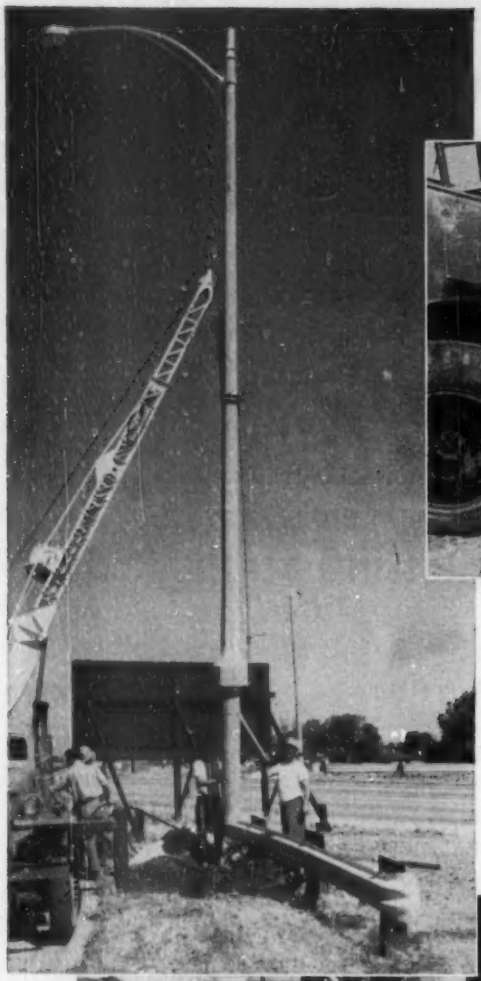
WINSTED, MINNESOTA

DRILL...SET...TAMP...

and Spun-Crete Hy-Lites go in at a fast clip!



DRILL... Back up the post hole digger and let the dirt fly. Hy-Lite standards with precast butt eliminate the need and cost of anchor rods and cast-in-field foundations. No expensive fussing with forms and templates.

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seven independent circuits. All circuits are of the series type connected to the 2,400-volt primary through 30-kilowatt constant-current transformers, controllers, protectors, and photoelectric cells to turn on and off the circuits. All wiring is overhead, including that for the downtown streets where aluminum wire was used. No. 8 bare copper wire was used in the residential areas.

The new downtown lights were turned on October 26 at a public ceremony held on a downtown street. Citizen reaction to the new lights is excellent. Everyone commented on the greatly increased amount of light produced by the new fixtures. The downtown circuit was designed to provide a light intensity of 1.2 lumens on the street surface. This design has proved to be correct. Accompanying photographs show the contrast between the new and the old lighting intensities, and some of the new and old equipment and fixtures.

Achieving Quality Street Lighting

By ROBERT SWACKHAMMER
General Electric Company
West Lynn, Mass.

GOOD STREET LIGHTING—by definition—is street lighting that meets the requirements of American Standard Practice. The "Code," which is sponsored by the Illuminating Engineering Society and approved by the American Standards Association, is the measuring stick for the quality of any street-lighting installation.

In simple terms, though, and without going into the engineering aspects of the Code, how can a city achieve good street lighting—and at what cost?

There is no one good answer to the question; however, there are several rules of thumb that may furnish guidance. In the final analysis, the exact engineering techniques require professionally competent lighting engineers. The suggestions given here are, therefore, no more than guides to an approach.

Why do we have street lighting at all? The reason is not always the same.

For example, in highly concentrated downtown areas, street lighting may be primarily for ornamental purposes; it may be desirable simply as an attractive aid to the merchants' effort to put shoppers in a buying mood. The fact that good lighting also facilitates the flow of traffic may be only a secondary factor.

On traffic arteries and secondary business streets, where automobile and pedestrian traffic may be heavy, safety may be the criterion. Smooth, uninterrupted flow of traffic may also be prominent factors.

Visual comfort, pedestrian safety, protection of people and property probably are the basic reasons for residential lighting.

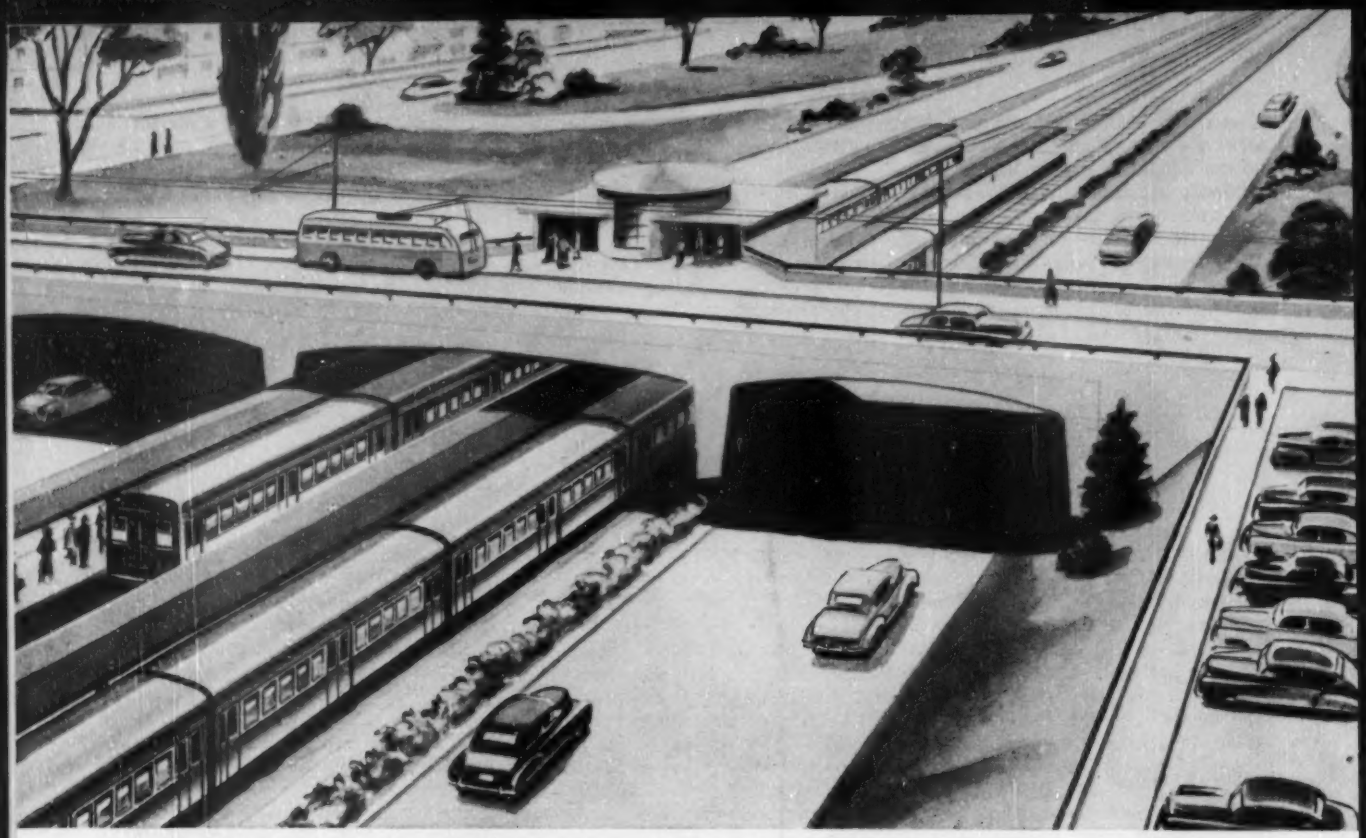
All American cities have at least some street lighting. According to safety officials, however, not much more than 10% of the existing street lighting is within acceptable levels.

The first and obvious approach, then, is: "How do we improve our present lighting system?" The fact is that manufacturers of equipment and utilities, alike, point out that merely replacing existing fixtures with modern ones will increase the output of useful light from 3 to 5 times. Yet, this increase can be achieved at an increase of about 25% in total cost. In other words, by spending just 25% more, the effectiveness of existing lighting systems can be increased 3, 4, or 5 times.

The results of this approach may not be Code lighting. However, it guarantees, immediately, more useful light per dollar of tax money. And it usually provides—in dramatic results—the springboard for a hard-hitting publicity campaign to get city-wide Code lighting. Utilities are happy to cooperate in this kind of city-wide planning and have the professional skill to recommend efficient, economical lighting programs.

The most satisfactory answer to

Modern lighting is making American streets as seeable at night as by day.



Will more "preference riders" be attracted if service is faster, more convenient?

"Preference drivers" need little urging to become "preference riders" when transit service is faster and more convenient than the private car. With more people parking their cars and riding transit, much can be done to relieve present-day traffic congestion and parking problems.

To achieve such service, however, there should first be support for measures which make it possible: In large metropolitan areas, traffic-free arteries including provisions for speedy rapid transit service (as in artist's conception of new Congress Street superhighway, Chicago); and on city streets, traffic measures which allow surface vehicles reasonable freedom of movement.

It's of great importance to factor in the role of transit in any program aimed at solving traffic congestion and parking problems, and to point out the obvious benefits to everyone—riders, businessmen, community leaders, even those who *must* drive. It's vital to the growth and well-being of cities, both today and tomorrow. General Electric Co., Schenectady, N. Y. 107-45

IS YOUR CITY "GOING PLACES"?

Transit's role in relieving traffic congestion and parking problems is dramatically told in General Electric's new 16-mm, 17-minute, documentary film, "Going Places." To arrange for a showing, or to obtain prints for your own local program aimed at relieving traffic congestion, contact your G-E Apparatus Sales office.

You can put your confidence in—

GENERAL ELECTRIC

quality street lighting is the city-wide plan as conducted by responsible municipal and utility officials working together.

First, what about existing equipment? Must it *all* be scrapped? Only rarely. In many cases, utility lighting engineers can find use in other areas for equipment that is obsolete for a particular application. For example, some equipment now being used in secondary-business sections (which may have grown) may be perfectly adaptable in residential areas. The utility lighting engineer, then, can tell *what* equipment is needed.

City traffic engineers can say *where* new equipment is needed. They know the streets that are "accident streets." These facts, when presented to utility officials, provide the basis for planning. They point up "first" needs, those areas that will quickly show tangible results. Nationally, 10% of our city streets produce 75% of our accidents. The city traffic engineer can identify these streets; the utility can recommend lighting—often with dramatic results.

Choosing Equipment

The utility generally is best situated to recommend actual equipment. Overall, though—whether the specifications call for filament, mercury, or fluorescent—the best luminaire is the cheapest. One street-lighting standard served by underground wiring, for example, may cost up to $1,200. Saving on a $50 luminaire (which is what puts the light on the street) may be poor economy.

The relative economy of different light sources is a somewhat controversial subject. The fact is, however, that in specific cases any one of the sources—filament, mercury, sodium, or fluorescent—may give most economical results. On a very busy main street, for example, the high initial cost of fluorescent equipment may be offset by lower maintenance costs, lower energy costs, or by more and better light per dollar. Again, the final decision should be made by competent engineers.

Cost of Good Street Lighting

The cost of good lighting may vary with the local situation. Nationally, for example, good lighting can be achieved at a per capita cost of about $2. Actually, the range is from something under $2 to over $3. The variables that account for this spread include miles of street and their classification. It is a fact, for example, that cities of equal population may have street mileage that is in ratio of 3 and 4 to 1.

There are many methods of paying for street lighting. Some cities buy, install, and maintain the entire system, and purchase power from the utility. Others buy the equipment and contract with the utility for installation, maintenance, and operation. Many cities—perhaps a majority—depend upon the utility to provide complete street-lighting service.

Regardless of the local set-up, the cost of street lighting generally breaks down into the so-called three-part rate: equipment, maintenance, and operation.

Equipment Charges

The percentage of cost applied to each part of the three-part rate is highly variable. Generally, equipment charges will vary with the quality of equipment and the type of installation. An underground system, for example, involves very high installation costs; as a result, equipment charges may be heavy. Many cities are finding that overhead systems are perfectly satisfactory and, at the same time, reduce costs.

A low maintenance figure does not necessarily mean lower cost. The light output of carefully maintained systems stays high longer. In terms of useful light per dollar of expense, a high maintenance factor may often result in inexpensive lighting.

In general, the local utility is the best source of information, advice, and help in planning city-wide Code lighting. For municipally operated utilities, the leading manufacturers offer expert planning services.

When Technical Help Is Needed

For technical help, the best source is *American Standard Practice for Street and Highway Lighting*. The 1952 issue may be obtained (at a nominal price) from Illuminating Engineering Society, 1860 Broadway, New York 23, N. Y. Most manufacturers also offer technical assistance without charge.

Whether a new street-lighting system is to be paid for by a bond issue or by higher bills from the utility, there invariably is a need for publicizing the benefits of street lighting. The taxpayers, of course have a right to know what they are getting for their tax dollars.

For interested persons, excellent sources for this kind of information are the National Safety Council (20 North Wacker Drive, Chicago 6, Ill.), and the Street and Traffic Safety Lighting Bureau, 1410 Terminal Tower, Cleveland 13, Ohio). Some equipment manufacturers will help promote better street lighting.

Author Robert Swackhammer, of the General Electric Company, poses with the most interesting development in modern street lighting — a fluorescent luminaire.

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HUNTINGDON, PENNSYLVANIA

Night Traffic Accidents — and Light

By DAVID M. BALDWIN
Director, Traffic Division
National Safety Council
Chicago, Ill.

THE 38,000 men, women, and children killed during 1952 in motor-vehicle traffic accidents was the largest total since 1941, when 39,969 persons died. On a rate basis, 1952 was the best year ever recorded. In 1925 the rate was 17.9 deaths per 100,000,000 vehicle miles. This has decreased quite steadily to the current low point of 7.3 in 1952.

Slightly over 70% of 1952's traffic deaths occurred in rural areas outside cities and towns. The total is estimated at 27,000 in rural areas and 11,000 in urban areas. It is interesting to compare this with 1941, when the rural total was just under 26,000 and the city total was slightly over 14,000. The percentage of the total deaths which was reported for rural areas has remained almost constant, however, for the last four years, which perhaps indicates that the trend toward an increasingly large rural death proportion has been halted.

Of primary importance for this discussion is the fact that 45% of the total deaths during 1952 occurred during hours of daylight and 55% during hours of darkness (including dusk and dawn). The year before, 1951, saw 56% of the total during darkness, while in 1941, 58% of the total occurred during night hours. This trend is hardly great enough to arouse either gratification or concern.

Accidents More Severe at Night

While 55% of fatal accidents occurred during hours of darkness, only 38% *of all accidents* occurred during night hours. Thus, the severity of night accidents would appear to be considerably greater than for daytime accidents.

When urban and rural accidents are considered separately, it is found that for urban accidents, 59% of the fatal ones occurred at night, while in rural areas 53% were nighttime accidents.

Both of these factors—that of increased severity for night accidents and the higher night percentage in urban areas as compared with rural areas—can be related to pedestrian accident experience. Pedestrian accidents account for about half the urban death total in contrast with the situation in rural areas in which pedestrian deaths are but one-seventh of the total.

The mileage death rate at night is about three times the rate during hours of daylight. Thus, it is safe to say that one's chances of being involved in a fatal traffic accident at night are three times as great as during the daytime. The rate at night is estimated at about 14 deaths per 100,000,000 vehicle miles and for daylight hours about 5 deaths per 100,000,000 vehicle miles. This same proportion holds fairly well for urban and rural experience when considered separately.

The most obvious difference in day and night driving is the difference in visibility. Other factors are fatigue, alcohol, and differences in the drivers themselves.

When Dr. A. R. Lauer of Iowa State College sampled drivers on Iowa highways every hour of the day, studying nearly 5,000 cases from fall to early spring, he found that speed of travel and age were inversely related at times when traffic flow was light. For instance, on the rural highways between midnight and 7 in the morning, 51% of drivers were in the 20- to 29-year age group, most of them 24 and below. The 20- to 29-year age group constituted only 23% of the daylight traffic and 24% of the traffic from 5 p.m. until midnight.

Dr. Lauer reported evidence of a group of drivers (constituting about 10% of the 20-to 24-year age group) flagrantly and dangerously violating safety rules from midnight to 4 a.m. He found only rare cases of excessive speed among other age groups or at other times of the day.

All of this points to the fact that particularly after midnight there is probably more reckless operation of motor vehicles than at other hours of the day, at least in proportion to the total amount of traffic. It would not be surprising, therefore, to find a proportionately higher accident experience.

Accidents in which the driver is reported as "apparently asleep" are causing considerable concern, however, on facilities like the Pennsylvania Turnpike and the New Jersey Turnpike. These accidents seem to occur more frequently during hours of darkness, or at times when most human systems are accustomed to sleep.

The number of alcohol-influenced drivers reaches a peak during hours of darkness. In Michigan, in 1947, 77% of the accidents involving drinking drivers occurred during hours of darkness.

Adequate Lighting

The best evidence that the change in visibility contributes to increased night-accident experience lies in the many examples of accident reduction following increased night illumination. Street-lighting improvements have almost universally been followed by fewer accidents and deaths. Perhaps even drunken drivers are better drivers when they can see where they are going.

This experience of accident reduction following the installation of adequate street lighting is well known. The evidence is clear that adequately lighted streets bring about reductions in traffic accidents. To the question of what can be done about the situation, certainly the most direct and obvious approach is improved street lighting. None of the other problems offers an opportunity for such a direct approach toward a solution. Every city should examine critically its present street-lighting program in comparison with I.E.S. standards and bring lighting on its high-accident streets up to par. The results will be longer life and greater happiness for the citizens of the community.

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The Crouse-Hinds Company offers all three types of high intensity fixtures to meet the three CAA Specifications (L-818, L-819 and L-820). All three fixtures (types HRC, HRL and HSL) are approved by CAA.

Type HRC utilizes a double prismatic lens system on a cast aluminum base, with a 500-watt, 115-volt lamp mounted on a movable socket. The main beams may be "toed in" or "toed out" by remote control from the tower to provide the best setting for particular visibility conditions. The candlepower is the highest of the three types. In bad weather the pilot sees more lights and sees them sooner with this system.

Type HRL is constructed with an optical prismatic Pyrex globe mounted on a 3-piece cast aluminum fixture assembly. Each fixture uses a 200-watt lamp and is provided with a series-to-series insulating transformer installed underground in the base housing.

This system has the lowest installation cost. Its use is often justified for non-instrument runways, as well as instrument runways.

Type HSL has a cast aluminum housing with two 95-watt sealed beam high intensity lamps inside and a 30-watt medium intensity light on top. Three insulating transformers are installed underground in the base. Each of the three lamps may be switched separately from the tower.

This system is economical to operate, since only 95 watts is used for the high intensity beam, and a 30-watt light is used in good weather. This fixture provides a main beam in only one direction, without the background haze resulting from the "back beam". After relamping, the sealed beam optical system is back to 100% initial efficiency.

All three fixtures provide the basic high intensity candlepower required and the three types have many construction features in common such as: cast aluminum housing, Pyrex glassware, disconnecting cable connector, same breakable coupling and standard steel base with base plate. All three units provide the necessary top light and side light needed for planes not on the approach path and all use a 5-stage brightness control.

Write for Bulletin 358-F. It contains detailed features and an impartial comparison of the relative advantages of the three systems with estimated installation costs of each.

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Freeways Within Cities—Factors Needing Consideration

By KING HAMILTON GRAYSON
Consulting Engineer
2040 *Newton St.*
Denver, Colo.

WHEN TRAFFIC AUTHORITIES select a city street or avenue for a speedway, they destroy present property values of the homes that face it. Cities and towns should be required to pay for such losses on property values of homes.

Citizens know that sooner or later everyone profits from new freeways. Cities like Denver and Los Angeles cannot expand without them, and nothing is truly gained if only a section of a freeway is widened only to create bottlenecks at some other point. However, unless the rights of adjoining homeowners and their children are given fair consideration, citizens can secure court injunctions to block progress for many years.

Dealing with the Federal Government

The federal government is pointing the way to fair dealings with citizens as shown in a recent case where it needed a farm and home for industrial expansion and paid the owner $10,000 more than appraised values to get immediate possession of the property.

If freeways are of vital necessity, then the losses to the individuals must be added to the construction costs of each speedway, and any increased costs to protect children must be the first consideration. Los Angeles courts have already protected the constitutional rights of homeowners, and engineers have been forced to circle homes where owners refused the price offered them. In these cases, engineers were forced to recognize the sentimental rights of the homeowners and paid the price demanded or waited until the death of the property owners made it possible to straighten out the speedways.

Freeways and Industry

Freeways are of vital importance in the government's plans to decentralize industry, especially those plants producing atom bomb materials and munitions. This, in some cities like Denver, is forcing homeowners into adjoining counties, often nearer their places of employment in those plants. Freeways become a real problem for the larger cities and also for the adjoining counties which object to sharing in the costs. The City of Denver now overflows the boundaries of the County of Denver on every side into new suburban areas. Highway expansion is of vital importance. Freeways are still more vital as a civil defense measure because, in the event of a bombing attack on Denver, the freeways would provide the most rapid means for evacuation.

Consider the Pedestrian

The planning and construction of freeways in all of our large cities which have been marked as Bomb Targets should not, however, be without due consideration to those who must cross them, child or adult. Nor should it be done without full payment to anyone for property damage or depreciation and without plans for adequate traffic police protection at every crossing, unless the freeways are to be located below street-level and are bridged and fenced.

Fencing freeways also safeguards the lives of those using them by keeping dogs and cats from entering upon them. One dead dog or cat lying in a freeway during rush hours can cause cars to skid, go out of control, or go into the path of another car or truck and can pile up a dozen cars or more before speeding drivers can be flagged to a stop. Such a catastrophe on a street-level freeway can also injure or kill those on the sidewalks and in or near store buildings.

With a circumferential freeway around the business district, the problem of the location of radial highways and freeways is minimized. Traffic arteries can be located where they will do the least damage to property and with least hazards to children. No matter on what street or streets these arteries are built, they enter the belt highway or freeway, and their vehicles proceed left or right to the proper exit. The freeway problem would thus subside into the selection of the streets to form the belt freeway. The fact that the existence of the belt will make possible the selection of comparatively innocuous routes for all other highways, superhighways, and freeways entering the city, should facilitate citizen approval for the belt freeway around the business district.

Those Red Stop Signs

NATIONAL Safety Council records show that during the last 10 years 40% of all fatalities in urban areas have occurred at intersections, and 12% in rural areas. The standard safeguard has been the yellow stop sign. It's had its chance.

Red, in traffic circles, always has signified a complete stop.

The red stop sign was recommended last June by the Joint Committee on Uniform Traffic Control Devices. The recommendation was for reflectorized white STOP letters and reflectorized red background, so that the sign will be brightly visible both day and night. This sign may be seen at night for the length of a city block; on the highway, with lights on high beam, for a quarter of a mile.

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"Yield Right of Way" Instead of "Stop"

A NEW TYPE of traffic control has been introduced in New York City. Twenty signs reading "Yield Right of Way" were erected at intersections where traffic conditions require some type of traffic control but where traffic volumes, both vehicular and pedestrian, and other factors indicate that neither traffic signals nor "Stop" signs are warranted.

The new 30-inch-by-30-inch sign, in the shape of a keystone, has a blue background with the message in silver. The entire sign is reflectorized with Scotchlite to provide visibility during the dark hours. For years, the traffic engineering profession has sought to associate the shape of the sign with the message contained thereon. For example, the conventional official "Stop" sign has an octagonal shape while most of the moving regulatory signs are square. The new keystone shape of the "Yield Right of Way" sign was adopted to associate the shape of the sign with its message.

Regulation Covering Usage

A new traffic regulation covering the use of this sign reads as follows:

> The driver of a vehicle approaching a "Yield Right of Way" sign shall slow to a reasonable speed for existing conditions of traffic and visibility, yielding the right of way of all traffic on the intersecting street which is so close as to constitute an immediate hazard.
>
> Proceeding past such sign with resultant collision or other interference with traffic on the intersecting street shall be deemed prima facie in violation of this regulation.

A motorist proceeding against the "Yield Right of Way" sign, therefore, must keep his vehicle under control to extent that he is prepared to yield or give way to the driver or drivers approaching either from the right or left on the intersecting street, and must be prepared to come to a stop if necessary in order to yield this right of way.

This type of traffic control is undergoing considerable research throughout many cities of the country. Among the first cities to adopt it was Tulsa, Okla., in 1951, and Providence, R. I., in 1952.

There is a great need for this type of control in this city and if found successful, it will be extended to many intersections. It also is highly probable that many of the intersections now using "Stop" controls eventually will be changed to the "Yield Right of Way" control.

T. T. WILEY
Commissioner of Traffic
New York, N. Y.

Traffic Signals for Regulation—Not Safety Alone

THAT PEOPLE don't understand the true function of traffic signals was pointed out by George E. Keneipp, Traffic Director of the District of Columbia.

Traffic-control signals are installed principally to regulate heavy traffic flow. The safety aspect alone should seldom be the decisive factor.

A national traffic study shows the frequency of fatalities at signalized intersections to be eight times greater than at intersections without controls. This would not justify abandoning traffic signals, however, since traffic flow would become hopelessly tangled without them.

The Traffic Director was also concerned about the average motorist's lack of consideration for pedestrian rights in traffic. The most frequently violated regulation is the requirements that drivers yield the right of way to pedestrians within a crosswalk.

Drivers Willing to Walk After Parking

DRIVERS in Providence, R. I., will walk more than twice as far between their parked cars and their destination as traffic experts estimate. Experts have said that 700 feet is the longest distance a parker will walk.

According to a survey, conducted by the city's traffic engineer, of parking habits of 923 drivers who use the city's year-old metered-parking lot, the average parker walks 1,590 feet between the lot and his destination. Others of the 923 drivers interviewed were found to walk nearly one-half mile.

Thirty per cent of the parkers said they had given up former parking lots in favor of the metered lot because of cheaper rates. The city lot charges 15 cents for four hours. Revenue from the 314 metered-parking spaces has averaged between $900 and $1,000 each two-week collection period.

Drivers also mentioned that they preferred the lot because they could park there longer than in curb spaces, did not have to worry about fender dents that might be caused by parking-lot attendants, and could lock their cars and take their car keys with them.

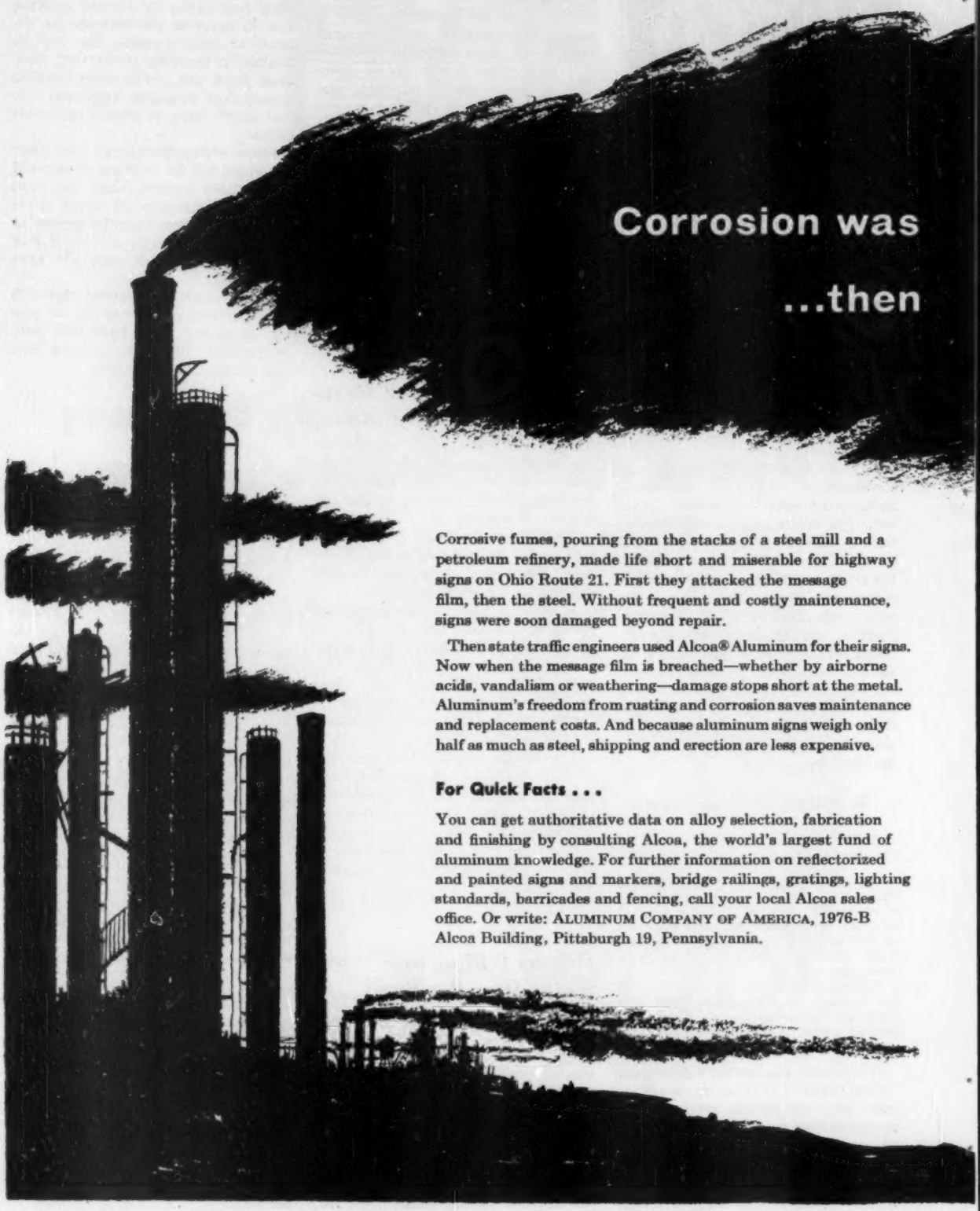
Interviewers also learned that 52% of the drivers now using the lot previously parked at the curb; 37% used public lots; 10% used private lots, and 1% parked in garages.

●

Congestion Costs New York City One Billion Yearly

URBAN TRAFFIC CONGESTION is costing New York City more than $1,000,000,000 each year, according to a survey completed by the Citizens Traffic Safety Board, a voluntary association of business men. Two hundred business firms supplied comparative figures for 1943, 1948, and 1952 on the number of vehicles operated, mileage covered, costs of truck maintenance, fuel, payroll and expansion, and estimated the portion of increased costs traceable to a worsening of the traffic situation. Some of the facts revealed in New York City are:

- More than $1 million of the city's annual milk bill goes to pay for delivery delays.
- About $8.5 million is added yearly to the cost of gasoline, fuel, and motor oil because of expenses traceable to traffic delays.
- A major oil company estimated that the rate of repairs per delivery truck was 6 cents per mile in New York City, 4 cents per mile upstate. This company has to install a new clutch in its trucks every 18,000 miles of city travel, against 40,000 to 50,000 miles out of the city. Men are taken off driving duty at the age of 64 in upstate New York, but at 54 in the city.
- Insurance company executives estimate that the New York City accident rate would drop 25% if traffic conditions were improved.
- Retail sales losses because of traffic problems are estimated at $100 million per year.



Corrosive fumes, pouring from the stacks of a steel mill and a petroleum refinery, made life short and miserable for highway signs on Ohio Route 21. First they attacked the message film, then the steel. Without frequent and costly maintenance, signs were soon damaged beyond repair.

Then state traffic engineers used Alcoa® Aluminum for their signs. Now when the message film is breached—whether by airborne acids, vandalism or weathering—damage stops short at the metal. Aluminum's freedom from rusting and corrosion saves maintenance and replacement costs. And because aluminum signs weigh only half as much as steel, shipping and erection are less expensive.

For Quick Facts . . .

You can get authoritative data on alloy selection, fabrication and finishing by consulting Alcoa, the world's largest fund of aluminum knowledge. For further information on reflectorized and painted signs and markers, bridge railings, gratings, lighting standards, barricades and fencing, call your local Alcoa sales office. Or write: ALUMINUM COMPANY OF AMERICA, 1976-B Alcoa Building, Pittsburgh 19, Pennsylvania.

wrecking signs on 21

Engineers tried Alcoa Aluminum

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Like hundreds of cities and towns across the nation, Council Bluffs, Iowa, uses an Adams Motor Grader for all kinds of street construction and maintenance . . . building grades—fine finishing—mixing and spreading black top—snow removal, etc. Forest E. Grover, the city's Director of Public Works, says, "The power and rigid construction of our 100hp. Adams make it ideal for heavy construction. We also find that it is less expensive to operate and has a better trade-in value when replacing machines." . . . Let your local dealer demonstrate the many time-saving, money-saving, advantages of Adams Motor Graders.

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Make your next motor grader an **ADAMS**

Day View of Mercury-Vapor Installation in Seattle, Wash.

THE STREET-LIGHTING UNITS shown in the accompanying photograph stretch for 1.3 miles along the University of Washington campus in Seattle.

They consist of 59 octagonal Carco steel poles made by the Pacific Car and Foundry Company of Renton, Wash. They are 28¼ feet high with a 6- or 8-foot underbraced-fixture bracket carrying Westinghouse OV-20 luminaries with EH-1 400-watt lamps of 21,000 lumens.

The wiring is underground, and the ballast is located in the easily accessible transformer base.

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The Manu-Mine organization can help you solve your difficult ground water problems through its contracting and consulting service. Specialists in:

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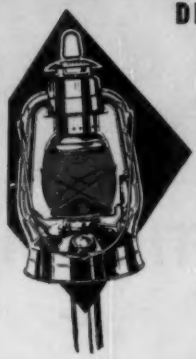
DIETZ SIGNALS of SAFETY

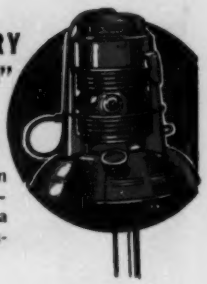


DIETZ TUBULAR LANTERNS

RED says DANGER. DIETZ LANTERNS say STOP. Light as needed, bright, or controlled without diminishment or failure till the last drop of kerosene. Rugged quality, economical performance. Backed by the oldest and largest manufacturer of portable light.

DIETZ-EMBURY "TRAFFIC-GARD" SAFETY LANTERN

"Magnified beam" seen for great distances – burns 100 hours on a pint of kerosene. Non-tip base.



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A miniature beacon with the new "Pencil Beam" visible from any direction close by or at long distances. Rugged, inexpensive, longest-burning, over 100 hours.

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Complete line of bomb and flat base types in DIETZ Blue threaded collar burner models and DIETZ – EMBURY Red Cam lock burner models. Made to give faultless service under most severe conditions.

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With an Oliver Industrial wheel tractor and mower-loader attachment, you have a year-round team that cuts time and dollars from hundreds of jobs. The mower is an all-hydraulic unit that slices matted grass to heavy brush clean and quick. It mows sidehills or down-slopes...cuts high or close, and clears obstacles without delay. Hydraulic safety release and breakaway action protect the cutter bar from damage.

When you need the loader, change controls...no attachments or alterations to make. Both units work independently. The bucket is carried low for perfect visibility in mowing operations. The cutter bar stores vertically or detaches conveniently for loading work. And for real versatility, these attachments add quickly to the loader —backfiller and bulldozer blade, coal and snow bucket, snow plow, lifting boom and fork.

If you're interested in low maintenance and cost-cutting, all-season performance with just *one unit*—see your Oliver Industrial Distributor for a demonstration of the mower-loader combination on either the Oliver "66" with ½-yard loader or the "77" with ⅜-yard loader.

THE OLIVER CORPORATION

400 West Madison Street, Chicago 6, Illinois

a complete line of industrial wheel and crawler tractors

A "Package" Plant

(*Continued from page* 135)

ther. In practice, this upper level of the sludge blanket clearly separates from the rising water which then proceeds to flow over into the clear well.

The service pump then draws the treated and settled water from the clear well, passes it through the neutralizing filter unit and the activated carbon purifier and then to service. The neutralizing filter has a bed of crushed and graded calcite which completes the clarification of the treated water and is able to correct and stabilize the pH of corrosive waters. The activated carbon purifier removes tastes and odors from the filtered water.

These package water-conditioning plants are extremely simple to operate and usually require only about one hour per day of the operator's time. They are very versatile and, without any additional equipment, may be used for treating a great variety of natural water supplies. Surface waters may be chlorinated and freed from sediment, turbidity, color, organic matter, tastes, and odors, and may also be softened. Ground waters may be softened, freed from iron and manganese, and chlorinated, if necessary.

In addition to their use in small communities and real estate developments, these package water-conditioning plants are used in camps, ranches, bottling plants, dairies, canneries, and a number of other industries where reliable water-purification equipment is a necessity and where the water requirements do not exceed the maximum capacity of the largest of these eight standard sizes.

61,200 Water Bills Punched in Rochester, N. Y.

By STANLEY C. WHITE
Tabulating Supervisor
Department of Finance
Rochester, N. Y.

TWENTY-ODD MILES south of Rochester, N. Y., water runs down the hills into Hemlock Lake and Canadice Lake, focal points of the city's watershed. From there it pours through three 3-foot lines at the rate of 38,000,000 gallons a day, until it reaches the city's 500 miles of distribution mains and 1,000 miles of service pipe. For one ton of this water, which is lifted from backyard shutoff to second-story faucet by energy equivalent to 4 man-hours, the City of Rochester charges its residents approximately eight cents.

Since 60,000 individual accounts are billed quarterly, and 1,200 commercial accounts are billed monthly, water accounting is a sizable operation that has long been handled in the city's Department of Finance by punched-cards. At the end of the fiscal year, sorting and tabulator listing of all punched-cards, including those covering water use, enable us to create a consolidated, itemized tax bill.

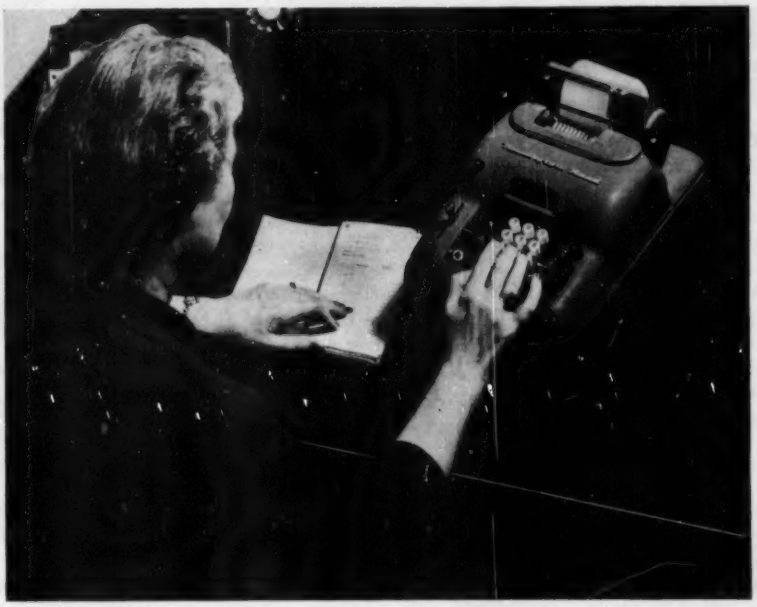
Our minimum quarterly charge of $3.25 for up to 1,200 cubic feet of water, necessitated checking the accuracy of the punch operators. We used to do this by examining the meter-read cards individually, using a multiple keyboard calculating machine. Comparing the calculator tape totals with the tabulator totals revealed any discrepancies.

The control operation, exclusive of comparison time, required 25 hours of one employee's time per week, and for quite a while I had felt that there should be a method of simplifying the operation without recourse to expensive accounting machinery, whose several columns would permit simultaneous recapitulation of consumption figures and minimum charges.

The solution came when we bought a Model 98 printing calculator to replace a machine due for retirement. Aware of our desire for effectuating a saving of time and trouble in the control operation, the Rochester branch office of Remington Rand made a few relatively simple changes in the mechanism of the Model 98, splitting its 10-digit capacity in two. This provided the calculator with two simultaneous columns of addition. By entering into the keyboard first the minimum charges (whenever indicated), then four spaces, the consumption figure, and striking the operating key, both figures are printed as separate accumulations.

When the deck of cards for any given street has been listed, the totaling operation yields two figures: total minimum charges for that street, and total consumption—all entries, of course, being individually listed on the tape.

Comptroller E. V. Norton points out that this control operation "is now being accomplished in 15 hours a week, representing an increase in efficiency of 40%."



Remington Rand Model 98, a 10-key machine that eliminates the need for rechecking.

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The G-E Type V semi-vehicle-actuated controller permits maximum flow on the main roadway (foreground), while traffic on the minor street (background) can cross through the intersection. Minimum delay is provided by the Type V controller because of its ability to count vehicles approaching the intersection. This exclusive feature, known as the traffic variable initial interval (rather than fixed), provides "green time" in accordance with the exact requirements of the vehicles detected. This gives minimum delay to main or arterial traffic. T-intersections such as entrances to hospitals, plants, and clubs are suggested applications.

SERVICING is easy with the same type of construction and maintenance features found in the famous Type F controller. The simplified electronic timing units and exclusive "service-minded" design features such as jack-mounted components make the efficient Type V popular with service crews.

MORE INFORMATION is available from your nearest G-E Apparatus Sales Office or Traffic Control Distributor. G.E. also manufactures the Type V controller in a fully vehicle-actuated density model. For further details, write for Bulletin GEC-941, Section 453-61, General Electric Company, Schenectady 5, N. Y.

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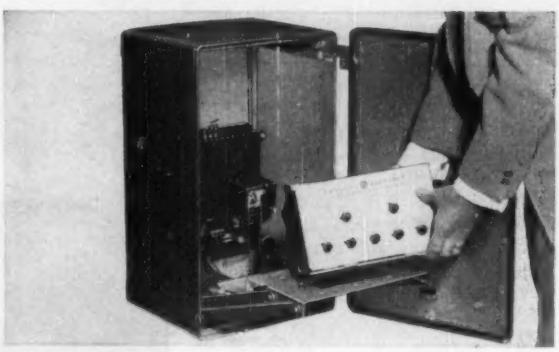
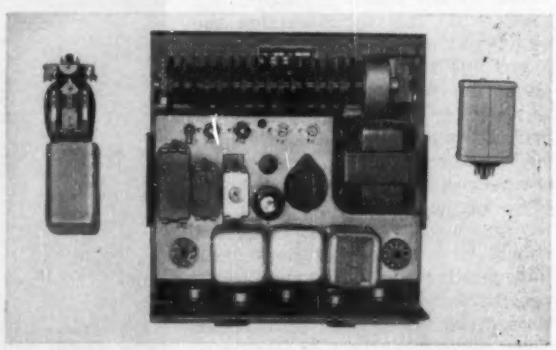
GENERAL ELECTRIC



TIMER IS EASILY REMOVED for shop servicing, and it swings out on pantograph arms for field inspection or maintenance.



JACK-MOUNTED RELAYS and unitized construction save service time and cost. All components are easy to see and replace.

Zoning and Planning Notes

Edited by NORMAN WILLIAMS, Jr.

Minimum Lot Size—Definition of a Lot—Spacing Regulations on a Single Lot

CALIFORNIA. *Christensen* v. *Thurber*, 261 Pacific (2d) 312 (District Court of Appeals, October 1, 1953).

A second dwelling was proposed on a parcel consisting of one recorded lot and part of the next lot. The relevant Sierra Madre zoning regulations specified that the minimum site area should be "one lot, or 7,500 square feet of lot area for each dwelling." Although a piece of the rear of one lot had been sold off, the area remaining included about 21,000 square feet; but if the original lot lines were used to define lot boundaries, one dwelling would be on a lot less than 7,500 square feet. The Court held that in this case the lot area requirements would be satisfied, regardless of the location of the original lot lines. The Court also held that the two houses would be far enough apart to satisfy a provision regulating the spacing of separate dwellings on the same lot.

[*Editorial Comment:* This case indicates one of several serious problems arising from the lack of a workable definition of a lot in many zoning ordinances. Here, as frequently, a lot could have been interpreted to mean a "tax lot," i.e., a lot as recorded and carried on the tax assessor's books. However, the Court sensibly decided to construe a lot in the light of current building practice, i.e., as a parcel of land intended for development as a separate unit. This makes good sense, although it involves a number of technical problems; and it would be well to define a lot thus specifically in the zoning law, and to refer to it as a "zoning lot."]

Prohibition of Residences In Industrial Area

CONNECTICUT. *Corthouts* v. *Town of Newington*, 99 Atlantic (2d) 112 (Supreme Court, August 4, 1953).

Newington, a rapidly growing town between Hartford and New Britain, is zoned mostly for residences, but has a substantial area in two types of industrial districts, primarily along the main line of the New York, New Haven and Hartford Railroad. After some 20 years of zoning, only 38 acres in the heavier industrial district is used for industry. In 1952, the Zoning Commission prohibited further residential construction in the heavier industrial district. This case involved a tract of land purchased before passage of that restriction, which was located substantially above the railroad right of way, partly in a B residence district but mostly in a second industrial district. The Newington zoning ordinance was prohibitory except in residence districts.

In invalidating the restriction against new residential construction in this situation, the Court began by noting that zoning ordinances usually permit progressively more uses in each district, and commented that this restriction, although not altogether novel, was "a marked departure from what has, heretofore, been accepted as common practice." Apparently, if the area already contained obnoxious industries, the Court might have regarded the regulation as a valid measure to protect public health and safety. However, in this instance, it was felt that this land would not be needed for industrial development now or in the near future, but that the land was adapted to and could be now used for residential purposes. The Court was also disturbed because hotels, hospitals, and schools and playgrounds were permitted in the heavy industrial district.

[*Editorial Comment:* This opinion provides a striking illustration of the general lack of information about even major developments in modern zoning techniques. The old concept of a hierarchy of uses has been widely and drastically modified; but there is no reference book describing such techniques which is remotely near adequate, and apparently this fact was not brought out clearly. As a result, the general description of zoning ordinances sounds as if it were written twenty years or more ago. In fact, a great many communities, including about one-half of the country's major cities, now prohibit new residential construction in industrial districts, partly to protect the lives and health of potential residents and partly to prevent good industrial sites from being taken up by scattered residential construction. Since to date there has been surprisingly little case law on these regulations, the above is necessarily an important decision.]

Zoning Restrictions Upon Large-Scale Subdivision of Land in Residence Districts

An ingenious approach has been devised in a Long Island village to cope with an old problem—whether and how a community may regulate the amount and timing of residential construction within its limits. Sands Point is a semi-rural village with an area of about 4 square miles, mostly undeveloped and a population under 1,000. A recent amendment to the local zoning ordinance first described the shift of residential construction to a mass production basis, and the potential resulting impact on utilities, schools and other community facilities. The construction and sale of dwellings in a residential area was then described as a "business," which would be permitted in a residence district only when specifically listed. Provision was made to allow this "business" in a residence district by temporary special permits. If public facilities were inadequate, the Board of Appeals was authorized to require that the construction of dwellings should be scheduled only when facilities were available; and such dwellings could also be required to be built in accordance with architectural renderings submitted. The village thus has the power to hold up new construction until services are available.

[*Editorial Comment:* It is not clear how long the village may delay utilities (though there is a reference to the period of the permit). Nor is it clear whether the village can prescribe other conditions, and refuse a building permit on the basis of noncompliance with such conditions. It should, perhaps, be noted that this device represents another attempt to enforce, through zoning, a quantitative restriction on the amount of new development, which might be handled more directly through subdivision control.]

Restrictions on Drilling in Nonconforming Oil Wells

CALIFORNIA. *Beverly Oil* v. *City of Los Angeles*, 254 Pacific (2d) 865 (Supreme Court, March 27, 1953).

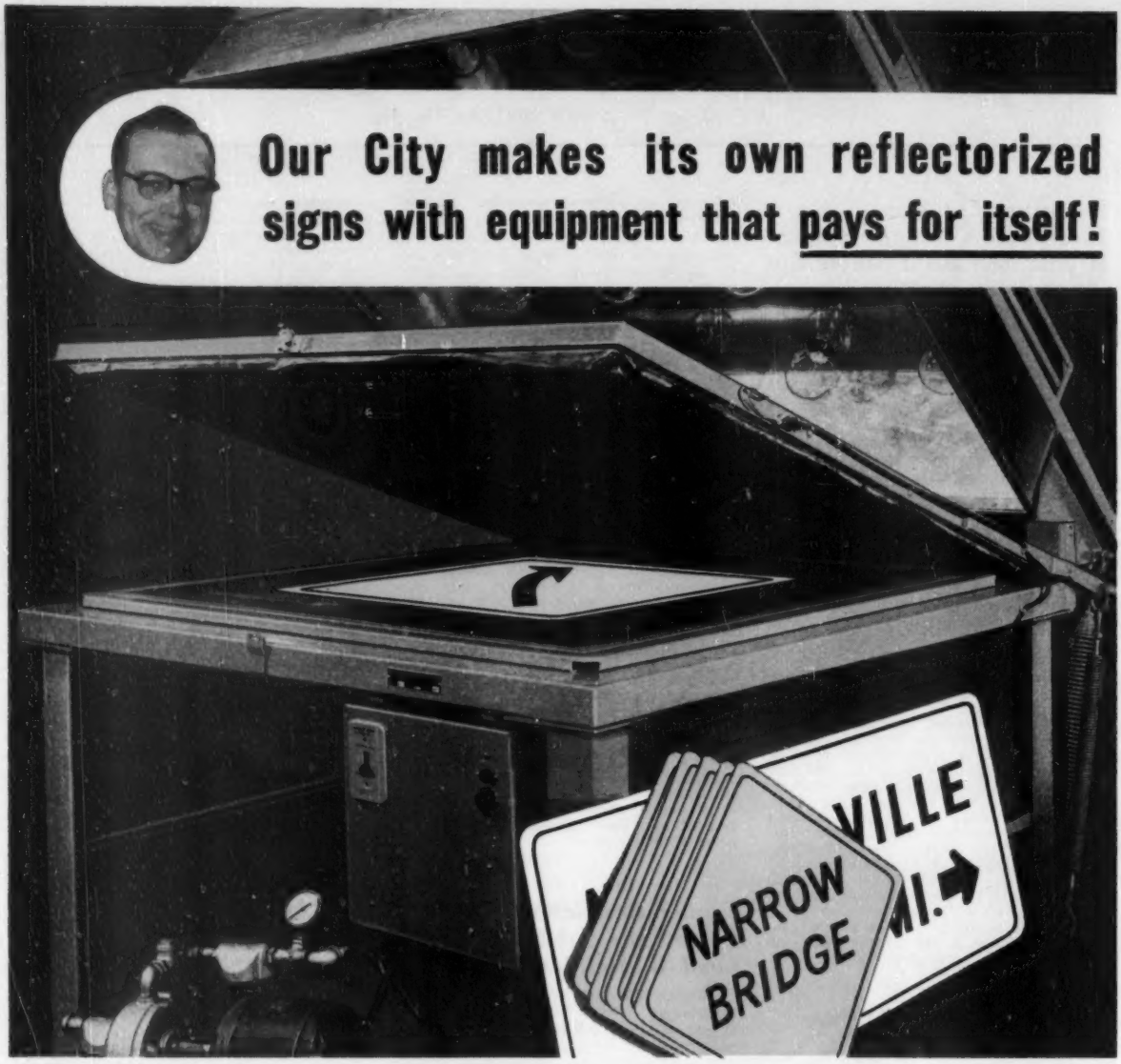
Under the Los Angeles zoning ordinance, oil drilling is limited to M-3 districts; and this case involved an area in Western Los Angeles with a few oil wells located partly in an M-2 and partly in a C-2 district. The surrounding area was largely commercial, and all other oil wells in the vicinity had been abandoned. Under the zoning law, where oil wells were nonconforming, no new wells were permitted to be drilled, nor could existing wells be deepened. The ordinance also provided that nonconforming uses of open land should be discontinued within five years from the effective date of the ordinance. This case involved a challenge against the restrictions on nonconforming uses. After the trial below, another provision was adopted requiring termination of nonconforming oil wells after 20 years, but this provision was not involved in this decision.

In the opinion, the City argued, and the Court agreed, that the provisions for requiring termination of nonconforming uses of land did not apply to nonconforming structures such as oil wells. However, the Court noted that a complete prohibition of oil drilling in designated areas had been upheld in several cases arising in California. It was also noted that a variance had been granted to allow plaintiff to engage in further drilling under certain circumstances, and that—since oil is a migratory substance—plaintiff was actually recovering oil from under land owned by its neighbors. The Los Angeles Municipal Code contained an express declaration that oil drilling and production in urbanized areas is detrimental to the public health, safety, and welfare. The Court, therefore, held (with one violent dissent) that the plaintiff was actually in a "highly favorable" position as compared with surrounding property owners.

Third Tube of Lincoln Tunnel

NEW JERSEY. *Port of New York Authority* v. *Weehawken Township*, 99 Atlantic (2d) 377 (Superior Court, September 23, 1953).

In this case, with an elaborate analysis of the enabling statutes, the Court held that the third tube of the Lincoln Tunnel was part of that Tunnel and not an "additional tunnel," and that the Port Authority was exempt from local control in locating the tunnel exits on the New Jersey side.



Our City makes its own reflectorized signs with equipment that pays for itself!

SPECIAL OFFER

on New Vacuum Applicator—plus complete supplies for making reflectorized signs. $1500.00 value just $937.50.

HERE'S EVERYTHING YOU NEED to make your own reflectorized signs! Vacuum applicator, "Scotchlite" Reflective Sheeting, sign blanks, etc., at a tremendous $562.50 savings. New 36" Vacuum Applicator is one-man operated. Fully automatic. Easy to use—just plug it in. 64" long x 48" wide x 48" high.

HERE'S WHAT YOU GET:

- New "Scotchlite" 36" Heat Lamp Vacuum Applicator
- 24" x 10 yd. roll of Wide Angle "Flat-Top" Silver "Scotchlite" Sheeting
- 24" x 10 yd. roll of Wide Angle "Flat-Top" Yellow "Scotchlite" Sheeting
- 24" x 10 yd. roll of Wide Angle "C" White "Scotchlite" Sheeting
- 30 Unmounted stop sign faces of red, yellow, or California Standard; "Scotchlite" Sheeting
- 40 .081 Aluminum blanks 24" x 24" (25 octagonal, 15 diamond)
- 6 Sets "Stop Ahead" "Scotchcal" Film cut out letters
- 6 Left turn symbols "Scotchcal" Film
- 6 Right turn symbols "Scotchcal" Film
- 6 "Narrow Bridge" cut out letters, "Scotchcal" Film
- 25 Sets border stripes "Scotchcal" Film (4 per set)
- 3 Templates (1 Narrow Bridge, 1 Stop Ahead, 1 Right & Left Turn symbol)

FREE diagram of model sign shop.

Minnesota Mining & Mfg. Co.,
St. Paul 6, Minn.

Send me diagram of model sign shop plus full information on making reflectorized signs.

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Address_____

City_____ Zone____ State_____

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Brand

REFLECTIVE SHEETING

Made in U.S.A. by Minnesota Mining and Mfg. Co., St. Paul 6, Minn.—also makers of "Scotch" Brand Pressure-Sensitive Tapes, "Scotch" Sound Recording Tape, "Underseal" Rubberized Coating, "Safety-Walk" Non-slip Surfacing, "3M" Abrasives, "3M" Adhesives. General Export: 122 E. 42nd St., New York 17, N. Y. In Canada: London, Ont., Can.

Recent City Manager Appointments

The following portraits are of city managers whose appointments have been announced in preceding issues of *The American City*

Leonard McClintock
El Centro, Calif.

Hal L. Everett
Colby, Kans.

Lee O. Haworth
Pittsburg, Kans.

James W. Harrison
Edinburg, Texas

J. Luther Davis
Tucson, Ariz.

Grand Island, Nebr., appointed OTIS L. BARBARICK, former manager of Lebanon, Mo., to succeed L. R. Rudd as city manager.

The first manager of Belle Glade, Fla., is TOM R. CARLE, former manager of Burkburnett, Texas.

HAYWARD B. CARSLEY, formerly public works engineer, was appointed city manager of Norway, Maine, succeeding Archie Stevens.

Ludington, Mich., appointed the former assistant manager, J. F. CARTIER, as acting city manager, to succeed Edward W. Larsen.

WALTER COOK left the managership of Jacksonville, Texas, to succeed R. A. Baca as city manager of Killeen, Texas.

CHARLES M. DIXON, one-time manager of Moultrie, Ga., was appointed city manager of Waycross, Ga., succeeding S. L. Ruff.

Richmond, Va., appointed HORACE EDWARDS, formerly an attorney at law, to succeed Sherwood L. Reeder as city manager.

Bryan, Texas, appointed the former manager of Odessa, Texas, CASEY C. FANNIN, to succeed H. A. Thomason as city manager.

Martinez, Calif., appointed THOMAS E. FLOWERS, JR., formerly administrative assistant in public works, to succeed Leonard McClintock as city manager.

WILLIAM J. GANSTER, one-time manager of South Norfolk, Va., was appointed city manager of Milton, Pa., succeeding Harry N. Showers.

The first manager of Northbrook, Ill., is HOWARD R. GOHLKE, former manager of Harbor Springs, Mich.

Boulder, Colo., appointed M. DON HARMON, formerly administrative assistant to the manager, to succeed Bert W. Johnson as city manager.

T. R. MCCASLING left the managership of Waurika, Okla., to succeed Tom R. Carle as city manager of Burkburnett, Texas.

WALTER W. MYNATT, one-time manager of Knoxville, Tenn., was appointed city manager of Gatlinburg, Tenn., succeeding H. F. Holt.

Seward, Alaska, appointed RAYMOND F. O'HARA, former manager of Delano, Calif., as its first city manager.

The first manager of Rome, N. Y., is LESLIE R. RUDD, former manager of Grand Island, Nebr.

L. H. STOWE, the former mayor, was appointed city manager of Waurika, Okla., succeeding T. R. McCasling.

DEANE P. WILEY, formerly comptroller at St. Joseph, Mich., was appointed city manager of Marshall, Mo., to succeed James L. Galloway.

CLARENCE E. RIDLEY
Executive Director
International City Managers' Association

REPRESENTATIVE MUNICIPAL BOND SALES

January 4 to January 12, 1954

Date of Sale			*Purpose*	*Average Maturity (Years)*	*Net Interest Cost Per Cent*
1-4	Vincennes, Ind.	$ 17,500	Refunding	7	2.204
1-4	Cuyahoga Co., Ohio	1,500,000	Ridge Road Improvement	8½	1.921
1-5	Gadsden, Ala.	230,000	Public Improvement	5½	2.67
1-5	Virginia, Minn.	52,000	General Obligation Water, Light and Heat Plant	5½	1.988
1-5	Langdon, N. D.	65,000	Curbing and Paving Dist. No. 3, Series A	6½	2.714
1-6	De Smet, S. D.	25,000	Auditorium Construction	6½	2.24
1-5	Middlebury, Vt.	238,000	School Dist. No. 4	9½	2.166
1-11	Little Rock, Ark.	120,000	Public Library	4	1.49
1-11	New Albany, Ind.	87,000	Municipal Parking	12½	2.48
1-12	Taunton, Mass.	200,000	Water, Act of 1933	10½	2.067
1-13	Colonie, N. Y.	745,000	District Improvement	15¼	2.79
1-14	Coshocton, Ohio	790,000	Sewerage System Improvement	13½	2.435
1-12	Davidson Co., Tenn.	1,000,000	County Building	13	2.168
1-12	Madison, Wis.	1,000,000	Parking System Revenue	17¾	2.951
1-12	St. Paul, Minn.	2,250,000	Capitol Approach Improvement	17½	2.195

COMPILED from THE DAILY BOND BUYER

Three Courses on City Planning Offered

THE NEW SCHOOL FOR SOCIAL RESEARCH announces three courses on city planning by leading planners and housing experts for the spring term beginning February 1. Carol Aronovici, director of the section on city planning at the New School, gives a course on "The City Planner and His Techniques" which meets Wednesdays at 6:20 p.m.

Dr. Aronovici and Paul Zucker, art historian and author of books on art, architecture, and city planning, will give a course, "Structure of Cities, Aesthetic and Functional" on Mondays at 6:20 p.m.

Charles Abrams, prominent housing expert, offers a series, "New City Patterns in an Industrializing World" meeting Tuesdays, 8:30 p.m.

SAFETY KEEPS PACE WITH SERVICE ON MORE THAN 100 RAILROADS

Service improves at a fast pace on American railroads. And, with the installation of WRRS Model 10 Automatic Signals, safety doesn't lag behind. Over 100 railroads have come to depend on the Model 10 Signal to keep their routes safe. Thousands of WRRS Model 10's guard busy railroad-highway crossings, yet there is not one accident on record as a result of operation failure on the part of these signals. We think that's a real safety record.

And Model 10's save costs, too . . . the first cost of installation and the second cost of maintenance. Analyses show that *numerous* crossings can be made safe with Model 10 installation for less than the cost of a *single* grade separation. Beside initial saving, Model 10's cost little to maintain . . . there is virtually no replacement of parts with these signals on the job.

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2428 S. Ashland Ave., Chicago 8, Illinois

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SAFETY IS YOUR BUSINESS
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Model 10
AUTOMATIC GRADE CROSSING SIGNALS
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WESTERN RAILROAD SUPPLY COMPANY
CHICAGO 8, ILLINOIS

LEADING MANUFACTURER OF GRADE CROSSING SAFETY DEVICES—MAKER OF RAILWAY SIGNALING ACCESSORIES

Model 10 installation on the C.R.I.&P. at 95th St., Chicago. Unusually heavy traffic (120 trains, 35,000 to 40,000 vehicles per day) give these signals the acid test for safety and efficiency. Record? Not a single fatality has occurred since installation in 1937.

Conventions—When and Where

Conventions listed this month for the first time are indicated by an asterisk (*)

Feb. 8-10—New York, N. Y.
ASSOCIATION OF TOWNS. Annual Meeting (Hotel Statler). Exec. Sec., Edw. F. N. Uthe, 91 State St., Albany, N. Y.

***Feb. 16—Newark, N. J.**
AMERICAN WATER WORKS ASSOCIATION—New Jersey Section. Winter Luncheon Meeting (Essex House). Sec., C. B. Tygert, Box 178, Newark 1, N. J.

Feb. 25-27—San Francisco, Calif.
AMERICAN CONCRETE PIPE ASSOCIATION. Annual Convention (Fairmont Hotel). Managing Dir., Howard F. Peckworth, 228 N. LaSalle St., Chicago, Ill.

March 1-4—Los Angeles, Calif.
ASSOCIATED GENERAL CONTRACTORS OF AMERICA. Annual Meeting. Managing Dir., H. E. Foreman, 1227 Munsey Bldg., Washington, D. C.

March 7-12—College Station, Texas
TEXAS WATER WORKS AND SEWERAGE WORKS ASSOCIATION. Annual Meeting (Texas A & M College). Sec., V. M. Ehlers, 501 W. 33rd St., Austin, Texas.

***March 9-12—New Brunswick, N. J.**
NEW JERSEY MOSQUITO EXTERMINATION ASSOCIATION jointly with the AMERICAN MOSQUITO CONTROL ASSOCIATION. Annual Meeting (Haddon Hall). Sec., Bailey B. Pepper, New Jersey Agricultural Experiment Station, New Brunswick, N. J.

March 10-12—Atlantic City, N. J.
NEW JERSEY SEWAGE AND INDUSTRIAL WASTES ASSOCIATION. Annual Meeting (Hotel Traymore). Sec.-Treas., Michael S. Kachorsky, P. O. Box 766, Manville, N. J.

March 10-12—Washington, D. C.
ASSOCIATION OF HIGHWAY OFFICIALS OF THE NORTH ATLANTIC STATES. Annual Meeting (Hotel Shoreham). Sec.-Treas., A. Lee Grover, 1035 Parkway Ave., Trenton, N. J.

March 11-14—Dayton, Ohio
AMERICAN INSTITUTE OF PLANNERS. Annual Meeting (Biltmore Hotel). Exec. Dir., Perry L. Norton, Room 5-496 A, 77 Massachusetts Ave., Cambridge 39, Mass.

March 14-17—Charleston, S. C.
SOUTHERN ASSOCIATION OF COMMERCIAL ORGANIZATION EXECUTIVES. Annual Meeting (Hotel Francis Marion). Exec. Sec., M. E. Miller, Executive Vice-President, Chamber of Commerce, Daytona Beach, Fla.

March 17-19—Chicago, Ill.
AMERICAN WATER WORKS ASSOCIATION—Illinois Section. Annual Meeting (LaSalle Hotel). Sec., Dewey W. Johnson, Cast Iron Pipe Research Association, 122 S. Michigan Ave., Chicago 3, Ill.

March 18—Boston, Mass.
AMERICAN WATER WORKS ASSOCIATION—New England Section. Annual Meeting (Hotel Statler). Sec., G. G. Bogren, Weston & Sampson, 14 Beacon St., Boston, Mass.

March 18-19—Raleigh, N. C.
SOUTHERN MUNICIPAL AND INDUSTRIAL WASTE CONFERENCE. (North Carolina State College.) For information address Mrs. H. F. Oehler, Jr., Office of Engineering Publicity, North Carolina State College, Raleigh, N. C.

March 19-21—Chicago, Ill.
AMERICAN SOCIETY FOR PUBLIC ADMINISTRATION. Annual Meeting (Conrad Hilton Hotel). Sec.-Treas., Laverne Burchfield, 1313 E. 60th St., Chicago 37, Ill.

***March 22-26—Amherst, Mass.**
SEWAGE TREATMENT WORKS OPERATORS' Short Course. (New England Field Training Center, University of Massachusetts). For information address the Division of Training, Massachusetts Department of Public Health, 543 State House, Boston 33, Mass.

March 22-24—Little Rock, Ark.
ARKANSAS WATER AND SEWAGE CONFERENCE. Annual Meeting (Marion Hotel). Sec., Harrison Hale, Southern State College, Magnolia, Ark.

March 24-26—New York, N. Y.
NATIONAL HEALTH COUNCIL. Annual Meeting. Exec. Dir., Philip E. Ryan, N.H.C., 1790 Broadway 19, N. Y.

March 25-27—Baton Rouge, La.
LOUISIANA MUNICIPAL ASSOCIATION. Annual Convention (Heidelberg Hotel). Sec.-Treas., Mrs. Douglas M. Warriner, 538 Reymond Bldg., Baton Rouge, La.

March 29-31—Greenville, S. C.
AMERICAN WATER WORKS ASSOCIATION—SOUTHEASTERN SECTION. Annual Meeting (Poinsette Hotel). Sec., N. M. deJarnette, Room 418, Wade Hampton Office Bldg., Columbia, S. C.

April 7-9—Emporia, Kans.
AMERICAN WATER WORKS ASSOCIATION—Kansas Section WITH THE KANSAS SEWAGE WORKS ASSOCIATION. Annual Meeting (Broadview Hotel). Sec.-Treas. Kansas Section, Harry W. Badley, 119 W. Cloud, Salina, Kans.; Sec.-Treas. Sewage Works Assn., Dwight Metzler, Room 2, Marvin Hall, Lawrence, Kans.

April 12-14—Toronto, Ontario
AMERICAN WATER WORKS ASSOCIATION—Canadian Section. Annual Meeting (Royal York Hotel). Sec., A. E. Berry, Director of Sanitary Engineering, Parliament Bldgs., Toronto 2, Ontario, Canada.

April 19-22—Lafayette, Ind.
PURDUE ROAD SCHOOL. (Purdue University). Exec. Sec., Ben H. Petty, Professor of Highway Engineering, CE Bldg., Purdue University, Lafayette, Ind.

April 22-23—Lincoln, Nebr.
AMERICAN WATER WORKS ASSOCIATION—Nebraska Section. Annual meeting (Cornhusker Hotel). Sec.-Treas., E. Bruce Meier, 201 Mechanic Arts, University of Nebraska, Lincoln, Nebr.

April 22-23—Watertown, N. Y.
AMERICAN WATER WORKS ASSOCIATION—New York Section. Annual Meeting (Woodruff Hotel). Sec., Kimball Blanchard, Room 1922, 50 W. 50th St., New York 20, N. Y.

April 22-24—Tucson, Ariz.
ARIZONA SEWAGE AND WATER WORKS ASSOCIATION. Annual Meeting (Santa Rita Hotel). Exec. Sec., M. V. Ellis, Supervisor Sewage Treatment Plant, Phoenix, Ariz.

April 23-24—Bozeman, Mont.
AMERICAN WATER WORKS ASSOCIATION—Montana Section. Annual Meeting (Baxter Hotel). Sec., A. W. Clarkson, Assistant Director, Division of Environmental Sanitation, State Board of Health, Helena, Mont.

April 26-29—Washington, D. C.
CHAMBER OF COMMERCE OF THE UNITED STATES. Annual Meeting. Exec. Vice-Pres., Arch. N. Booth, 1615 H St. NW., Washington, D. C.

May 3-5—Chattanooga, Tenn.
AIR POLLUTION CONTROL ASSOCIATION. Annual Meeting (Patten Hotel). For information address Robert T. Griebling, 4400 Fifth Ave., Pittsburgh 13, Pa.

***May 4-6—Chicago, Ill.**
AMERICAN PUBLIC POWER ASSOCIATION. Annual Meeting (Hotel Morrison). Exec. Sec., Alex Radin, 1757 K. St. NW., Washington 6, D. C.

***May 4-6—Washington, D. C.**
NATIONAL HIGHWAY USERS CONFERENCE. Annual Meeting (Mayflower Hotel). Dir., Arthur C. Butler, 952 National Press Bldg., Washington 4, D. C.

***May 5-7—New Orleans, La.**
ASSOCIATION OF STATE PLANNING AND DEVELOPING AGENCIES. Annual Meeting. Sec.-Treas., Leslie Hill Prince, 1026 17th St. NW., Washington, D. C.

May 6-8—Gatlinburg, Tenn.
TENNESSEE MUNICIPAL LEAGUE. Annual Meeting (Greystone Hotel). Exec. Sec., Herbert Bingham, 228 Capitol Blvd., Nashville 3, Tenn.

May 9-16—Atlantic City, N. J.
NATIONAL CONFERENCE OF SOCIAL WORK. Annual Meeting (Ritz Carlton and Ambassador Hotels). Exec. Sec., Joe Hoffer, 22 W. Gay St., Columbus, Ohio.

***May 10-12—Lafayette, Ind.**
INDUSTRIAL WASTE UTILIZATION CONFERENCE. Annual Meeting (Purdue Union Building). Chairman, Don E. Bloodgood, C. E. Bldg., Purdue University, Lafayette, Ind.

***May 20-21—Boston, Mass.**
AMERICAN SHORE AND BEACH PRESERVATION ASSOCIATION. Annual Meeting (Sheraton Plaza Hotel). Sec.-Treas., P. J. Gannon, 1060 Broad St., Newark 2, N. J.

***May 18-21—Detroit, Mich.**
NATIONAL INSTITUTE OF MUNICIPAL CLERKS. Annual Meeting (Hotel Statler). Pres., Arthur Shinners, Town Hall, Brookline, Mass.

***May 23-26—Chicago, Ill.**
NATIONAL ASSOCIATION OF PURCHASING AGENTS. Annual Meeting (Conrad Hilton Hotel). Sec., Eugene A. Gump, Purchasing Agent, State of Michigan, Lansing, Mich.

***May 23-27—San Francisco, Calif.**
MUNICIPAL FINANCE OFFICERS' ASSOCIATION OF THE UNITED STATES AND CANADA. Annual Meeting. Exec. Dir., Joseph F. Clark, 1313 E. 60th St., Chicago, Ill.

***May 23-28—Seattle, Wash.**
AMERICAN WATER WORKS ASSOCIATION—National group meeting jointly with the Pacific Northwest Section. Annual Conference. Sec., AWWA, Harry E. Jordan, 521 Fifth Ave., New York, N. Y.; Sec.-Treas., Pacific Northwest Section, O. P. Newman, Box 548, Boise, Idaho.

***May 24-26—Elmira, N. Y.**
EASTERN ASSOCIATION OF FIRE CHIEFS. Annual Meeting (Hotel Mark Twain). Sec., Chief Edwin J. Clark, Box 271, Wayne, Pa.

***June 13-16—Chicago, Ill.**
NATIONAL ASSOCIATION OF TAX ADMINISTRATORS. Annual Meeting (La Salle Hotel). Exec. Sec., Charles F. Conlon, 1313 E. 60th St., Chicago, Ill.

***June 15-19—Boston, Mass.**
THE AMERICAN INSTITUTE OF ARCHITECTS. Annual Convention (Hotel Statler). Convention Manager, Arthur B. Holmes, 1735 New York Ave. NW., Washington 6, D. C.

***June 16-18—Monticello, N. Y.**
NEW YORK STATE CONFERENCE OF MAYORS AND OTHER MUNICIPAL OFFICIALS. Annual Meeting (Laurels Country Club). Exec. Sec., Morgan Strong, 6 Elk St., Albany, N. Y.

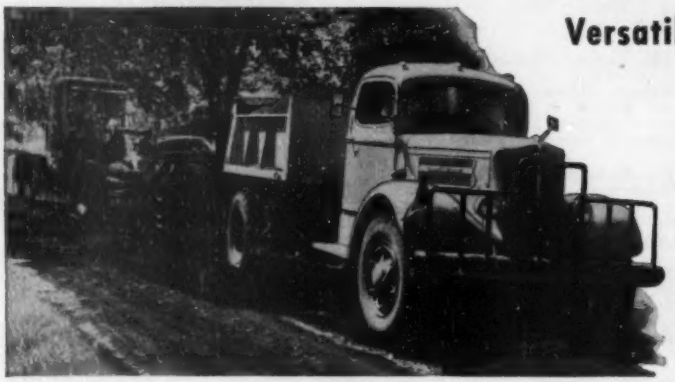
NEW TRANSPORTATION IDEAS

The WHITE MOTOR Company
Cleveland 1, Ohio

White

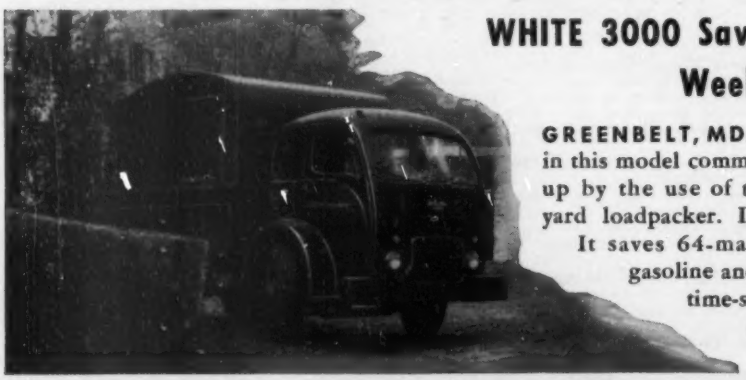
New WHITE 3000 Speeds Up Highway Roadmarking

QUEBEC—From Canada comes this modern way to speed highway roadmarking. New roadmarking painting equipment on this White 3000 gains greater maneuverability because of the White 3000 short wheelbase, short turning radius and wider front axle. Outstanding visibility of the "3000" is a big help, too.



Versatile WHITE "Roadscraper" Does Double Duty Service

TULSA—Versatility of White Trucks is demonstrated in this street repair unit in service in Tulsa. This White is one of five with 3½ yard hydraulic dump body and a 10-foot understanding scraper blade. Whites can be tailored to exact operating needs with definite advantages of efficiency and performance.



WHITE 3000 Saves 64-Man Hours Per Week in Refuse Collection

GREENBELT, MD.—Residential refuse collection in this model community of 7,000 has been speeded up by the use of this White 3000 with 15 cubic yard loadpacker. It replaced two nine-yard units. It saves 64-man hours a week and saves on gasoline and oil. Its maneuverability is a real time-saver in the narrow service courts and cul-de-sacs.

SEE YOUR WHITE REPRESENTATIVE FOR FACTS ABOUT THE ADVANTAGES OF WHITE SPECIALIZED DESIGN FOR YOUR APPLICATIONS

Municipal & Civic Publications

Chemical Feed Machine Manual

A booklet issued by the Missouri Water and Sewerage Conference, State Office Bldg., Jefferson City, Mo. Paper bound, 64 pp. $2. Free to members of the Conference.

A compilation of data describing 17 different makes of chemical-feed machines used in water and sewage treatment. This manual represents the work of William B. Schworm, senior chemical engineer of the St. Louis (Mo.) Water Division.

Technical Illustration

Higgins Ink Company, Inc., 271 Ninth St., Brooklyn 15, N. Y. Paper bound. 90 pp. $2.50.

A good book to have around any municipal drafting room. The text gives sound fundamental advice on basic drawing techniques, and lettering; instruction on perspective, axonometric and similar types of drawings, and then advances to rendering techniques and specialized types of drawings.

Method of Converting Heavy Motor-Vehicle Loads Into Equivalent Design Loads on the Basis of Maximum Sheers

Bulletin 131. 96 pp.

Stress-Producing Effects of Equivalent Designs Loads on Modern Highway Bridges

Bulletin 132. 82 pp.

By Stephenson and Cloninger. Texas Engineering Experiment Station, College Station, Texas. Free in single-copy distribution.

Two handbooks designed to make the work of the structural engineers less difficult. Both are heavily documented with charts and tables. Bulletin 131 provides tools for the engineer so that he can cope with the gargantuan loads that the trucking industry imposes upon the roads today.

Bulletin 132 provides a means of deciding how badly overstressed modern bridges may be today, even though amply designed for loads existing 20 years ago.

College-Community Relationships in New York State

By H. Curtis Mial. The New York State Citizens Council, Inc., 613 E. Genesee St., Syracuse, N. Y. December 1953. 100 mimeo. pp.

With the support of The Association of Colleges and Universities of the State of New York and The State University of New York, the Council undertook this cooperative study based on the activities of 26 colleges and universities, as the first phase of the University Community Cooperation Project. The procedure described in Appendix A involved visiting and host teams and provided interinstitutional exchange of experience.

(See article by Thomas L. Cotton, a member of the Advisory Committee, which will appear in the March 1954 issue of THE AMERICAN CITY.)

Traffic Accident Investigator's Manual

The Traffic Institute, Northwestern University, Evanston, Ill. 1953. 285 pp. $3.50.

This manual for people—especially police officers—who have to investigate traffic accidents is a complete rewriting of the Accident Investigation Manual published by the Institute in 1940. It is based on practical experience, and covers such aspects of traffic accidents as the causes, legal responsibilities, questioning drivers and witnesses, road and weather conditions, clues, skidmarks, photography, speed estimates, hit-and-run investigation, and civil-liability aspects of police investigation.

Youthful Offenders, Court and Community, Their Reciprocal Needs

Report of Chief Justice Irving Ben Cooper, New York City Court of Special Sessions. November 1953. 27 pp.

As he has done in previous reports and articles, Chief Justice Cooper here makes a plea for proper treatment of young criminals. He pleads especially for adequate professional help in the courts to enable identification of the youthful offender with good moral potential who can be safely returned to the community, as opposed to the hair-trigger, perverted or psychopathic first offender who needs institutionalized care.

The Niagara Falls Industrial Community

A Study in Governmental Relations—By Thomas H. Reed and Doris D. Reed, Wethersfield, Conn. Published by the City of Niagara Falls, and the planning boards of the Towns of Lewiston and Niagara, N. Y. 1953. 158 pp.

The purpose of this study was to determine the best method of providing water, sewers, schools, and other municipal services to the three governmental units—the City of Niagara Falls and the Towns of Lewiston and Niagara. The authors unhesitatingly recommend consolidation, especially since they believe that Niagara and Lewiston have not yet reached a stage of development which would raise insuperable difficulties to such a solution.

The Madison Central Business Area

A Case Study of Functional Change—By Richard U. Ratcliff. Bureau of Business Research and Service. The University of Wisconsin, Madison 6, Wis. October 1953.

Data on the changing functions of Madison's (Wis.) central business area are presented and evaluated in this case study. From the Madison history, Professor Ratcliff draws the conclusion that the convenience factor makes the cause of central areas far from hopeless. He bases his study of convenience on the two component qualities—accessibility (ease of movement from home or work to a destination such as a central business district) and availability (the number and kind of services within the destination area).

Public Authorities in the States

The Council of State Governments, 1313 E. 60th St., Chicago 37, Ill. 1953 170 mimeo. pp. $3.

At its 1952 meeting the Governors' Conference requested the Council of State Governments to make a study and submit recommendations with respect to the use, financing, and responsibilities of public authorities, as well as the philosophy underlying such governmental bodies.

In carrying out this assignment, the Council has traced the development of authorities, suggested reasons for their establishment, and presented data on their organization, operation, powers, financing, and uses. In addition, the report includes a helpful bibliography, 13 tables containing data on the organization, operation and financing of public authorities at the state level, and an appendix containing summaries of 42 public authorities—their organization, purposes and projects, governing board, and financing.

Chemical Character of Surface Waters of Kentucky, 1949-51

By W. L. Lamar and L. B. Laird, 1953. Agricultural and Industrial Development Board of Kentucky, Frankfort, Ky. 134 pp. $1.

This report is the first of a series on a systematic study of the chemical character of the surface waters of Kentucky. The report describes the chemical character of the surface waters in Kentcky as well as the significance of the chemical and physical properties. Brief descriptions are given for eight river basins.

We—The People of Sacramento, Calif.

Published by Sacramento City Government, October 1953. 40 pp. Single copies free from City Clerk, City Hall, Sacramento, Calif.

Pictorial account of 1952-53 fiscal year operation of Sacramento city government. A "statistically typical" homeowning family was selected for a photographic tour of municipal services conducted by members of City Council. Daily and monthly costs of services to a family were shown in theme of what a family receives for taxes it pays.

Selected Readings in Real-Estate Appraisal

Published under the direction of the Publication Committee, American Institute of Real Estate Appraisers, 22 West Monroe St., Chicago 3, Ill. 1953. 1317 pp. $10.

Although this book has been compiled particularly to meet the need of instructors and students in the American Institute of Real Estate Appraisers' case study and extension courses for more collateral reading material, the reading references will be valuable to the practicing appraiser as well as to the student. The articles reproduced cover the entire range of valuation theory, principles, and procedures. They include many of the outstanding articles that have appeared, through the years, in *The Appraisal Journal.*

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MARLOW PUMPS • RIDGEWOOD, NEW JERSEY

Special District Governments in the United States

Governments Division, Bureau of the Census, Washington, D. C. (State and Local Government Special Studies, No. 33.) January 6, 1954. 8 pp.

Special district governments are usually responsible for performing only a single function or a narrow range of functions and are set up to serve certain areas or to provide facilities to particular locations. This report of the Census Bureau on such little-known local governments supplements information previously available in *Summary of Governmental Finances in* 1952 and *State Distribution of Public Employment in* 1952, as to numbers, finances, and employment of special districts.

Statistical Abstract of the United States, 1953

Bureau of the Census. For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. 1953. 1041 *pp.* $3.50.

The 74th edition of the Statistical Abstract summarized statistics on the industrial, social, political, and economic organization of the United States. This book serves as a convenient volume for statistical reference, especially for national data, and also as a guide to other statistical publications and sources. Each table gives its source in a footnote.

The 1953 edition presents data from the 1950 Census of Population, Housing, and Agriculture, not included in previous editions.

More detailed statistics on local matters may be obtained from the supplement to the Abstract, *County and City Data Book*, 1952, published in May 1953.

State Traffic Safety

Its Organization, Administration, and Programming—By Maxwell Halsey. The Eno Foundation for Highway Traffic Control, Saugatuck, Conn. 1953. 280 *pp.*

In authorizing this study, The Eno Foundation hoped to throw light upon the problems of public support for a way toward fewer accidents. The author describes safety organization and successful safety projects. He tells how many states are improving their safety organization and planning. Explanations are sufficiently detailed to enable a state safety director, for whom this volume is primarily intended, to adapt a plan to his own area with necessary local adjustments.

Guide to Personnel Activities of Professional and Technical Associations

By Dorothy W. Otten. Personnel Report Series No. 534 of the Civil Service Assembly. University of Michigan Press, Ann Arbor, Mich. 1953. 56 *pp.* $2.

The Guide is a directory of personnel services offered by associations of professional workers in fields of importance to government, intended for use by public personnel administrators in locating sources of assistance for various personal operations. The organizations are listed under such general headings as Administration, Finance, Health, Natural Resources; and under each listing is given membership and organization data, periodical publications, facilities and activities in the personnel field.

Management Information Service Reports

International City Managers' Association, 1313 E. 60th St., Chicago 37, Ill. Available only to subscribers for the Service.

Improving Local Traffic Conditions

Report No. 118. November 1953. 8 *pp.*

A guide for organization of street traffic control in cities of less than 50,000 population. This report advises on traffic planning and studies, on control methods, on training of employees, on traffic supervision, and on getting public acceptance.

Administration of Street-Lighting Service

Report No. 119. December 1953. 10 *pp.*

Some of the major elements in a street-lighting program are here discussed as an administrator must consider them. Major sections of the report deal with levels of lighting, ownership and maintenance rates related to cost, financing extensions and modernization, maintenance and operation, equipment, contract provisions, records, and public relations.

1954 Roundup of Civil-Defense Films and Film Strips

British Information Services, 30 Rockefeller Plaza, New York, N. Y. 1954. 15 *mimeo. pp.*

In this brochure B.I.S. describes three new films now being used in CD atom bomb training in Britain. They are:

"The Atomic Bomb — Its Effects and How to Meet Them." A 50-minute detailed examination of what would happen to a city if an atomic bomb of a given power were detonated at a given height above it. Rental $6. Sale $150.

"Five Stages of Rescue." An analysis of the procedure to be followed in rescue work after an atomic bomb explosion. Rental $3.75. Sale $90.

"Water for Fire Fighting." What every fire fighter ought to know about water and hoses to do his job effectively. Rental $15. Sale $150. ($400 in color.)

Numerous other CD films are also listed herein, and briefly described.

Zoning and Planning Law in New Jersey, with Forms

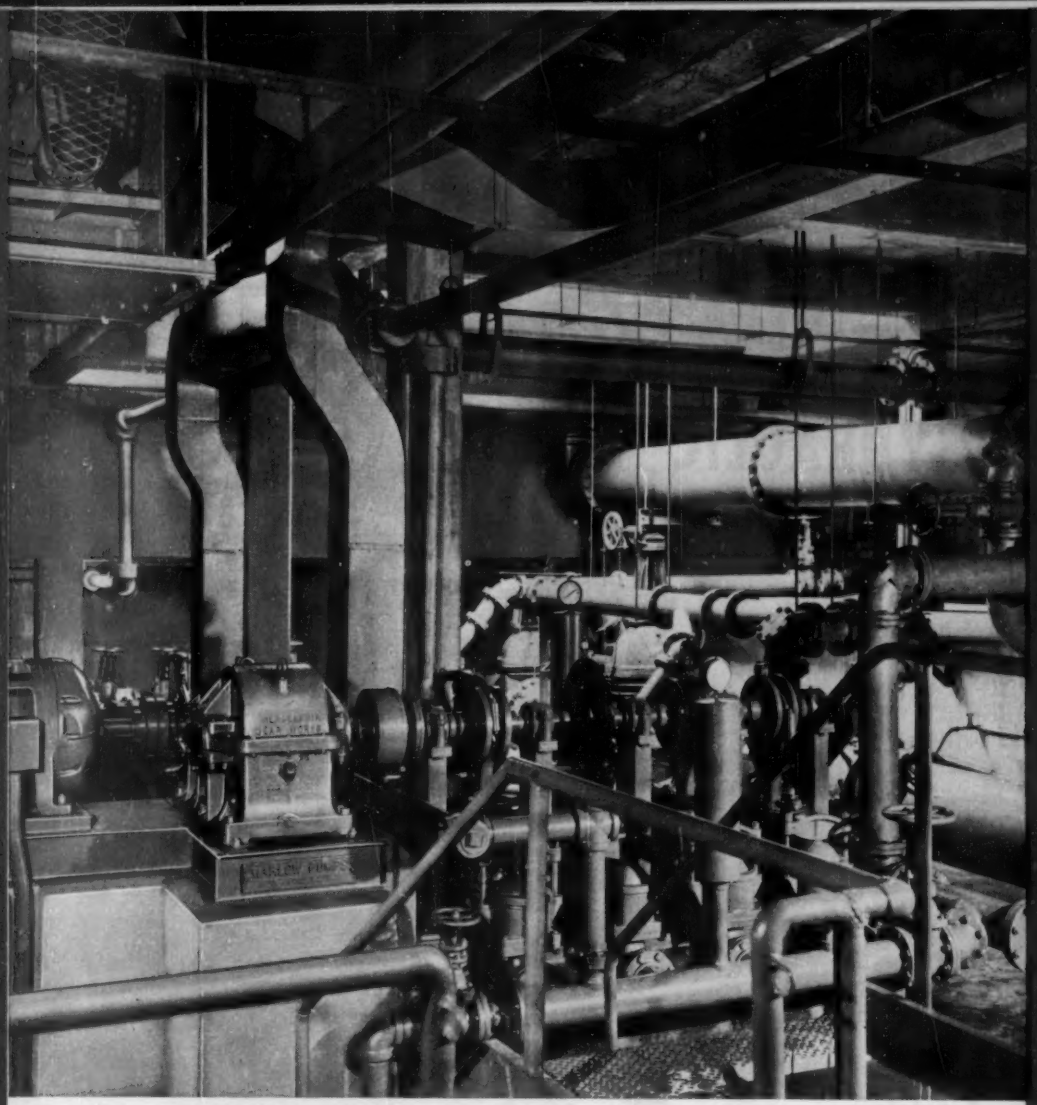
By Frank Romano. Associated Lawyers Publishing Co., 140 Vassar Ave., Newark 8, N. J. 1953. 471 *pp.* $15.

This book, intended to present a synthesis of the fundamental principles underlying the vast body of cases, statutes, rules, and orders which constitute the field of zoning and planning in New Jersey, will be of special interest to members of the New Jersey bar and to those serving on boards of adjustment and planning bodies.

Pertinent cases and statutes, and explanations of procedure are so grouped under the subject being discussed, and so clearly indexed, that the reader will be able to solve problems quickly and expeditiously.

The various forms included in the book should also be helpful guides.

(*Continued on page* 167)



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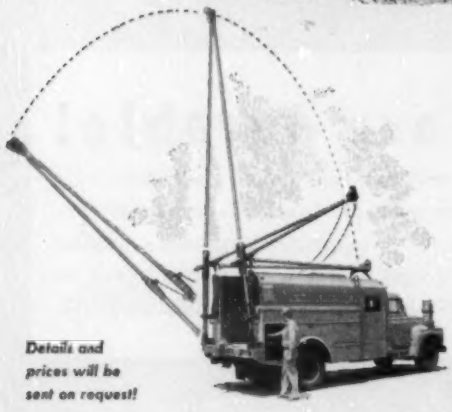

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United States Government Organization Manual, 1953-54

Compiled by Federal Register Division, National Archives and Records Service, General Services Administration. Available from Superintendent of Documents, Government Printing Office, Washington 25, D. C. $1.

This manual, revised through July 1, 1953, includes the new Department of Health, Education, and Welfare, and many other changes made pursuant to the President's Reorganization Plans of 1953. It also includes the names and titles of approximately 3,500 key officials.

In the revised manual may be found the answers to many questions that arise daily in Washington and throughout the Nation—questions such as: What is the name of the newest department in the Executive Branch of the Government? How was it established? What are the names of the members of the President's Cabinet, the Secretary of the Navy, the Army, the Air Force? Is the National Security Resources Board still in existence? What are the new functions of the Office of Defense Mobilization?

As the official organization handbook of the federal government, the 734-page Manual contains sections on the legislature, judicial, and executive branches. The descriptive material outlines the legislative authority, purpose, functions, and activities of each agency, and includes 34 charts showing the organization of Congress, the executive departments, and the larger independent agencies.

Official Joint Planning in the United States

Information Report No. 56 of the Planning Advisory Service, 1313 E. 60th St., Chicago 37, Ill. November 1953. 41 mimeo pp. Available only to subscribers for the Service.

In areas where physical planning problems extend over political boundaries, joint planning fills the need for coordination and economy in planning activities. Acknowledging the growing trend toward joint planning, this Information Report describes joint planning agencies, ways in which they may be organized, and their operations. It includes also the major organizational details of 33 joint planning agencies, giving purpose and scope in each case, units served, cooperation agreement, legal status, budget, staff, and position in governmental structure.

Preliminary Master Plan for Berkeley

City Planning Commission, Berkeley, Calif. 1953. 132 *pp.*

The Preliminary Master Plan proposes the allocation of the existing area of Berkeley among residential, commercial, industrial, and university uses in such a way as to achieve a balanced community. It proposes, also, limiting the population to some 176,000 persons (exclusive of the waterfront) and recommends the creation of a series of residential neighborhoods, each of which will be big enough to support essential residential services, and which will be kept free of large volumes of through traffic and other disturbing influences. Maps, charts, and tables are freely used to supplement the text.

Manufacturers' Tax Exemption in Maryland

Maryland State Planning Commission, 100 Equitable Building, Baltimore, Md. October 1953. 25 *mimeo. pp. 25 cents.*

Existing exemptions in the counties and cities of Maryland have been summarized in this study, and the value of the exemptions measured. As an indicator of the public contribution, the amount of tax revenue relinquished by the state and its political subdivisions was computed. Calculations were also made of the effect on the tax rate if further exemptions were granted or if existing exemptions were repealed.

Your California Governments in Action

By Winston W. Crouch and John C. Bollens, University of California Press, Berkeley 4, Calif. 1954. 296 *pp.* $2.75.

This textbook on California's government covers all levels of administration in easy-to-read style.

In tracing the history of the state's constitution from the first constitutional convention to present operation, the book tells of the voting and elections in California, organization of the state legislative, executive, and judicial branches, as well as about county and city government and special districts.

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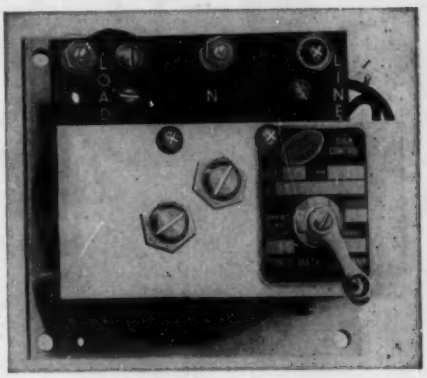

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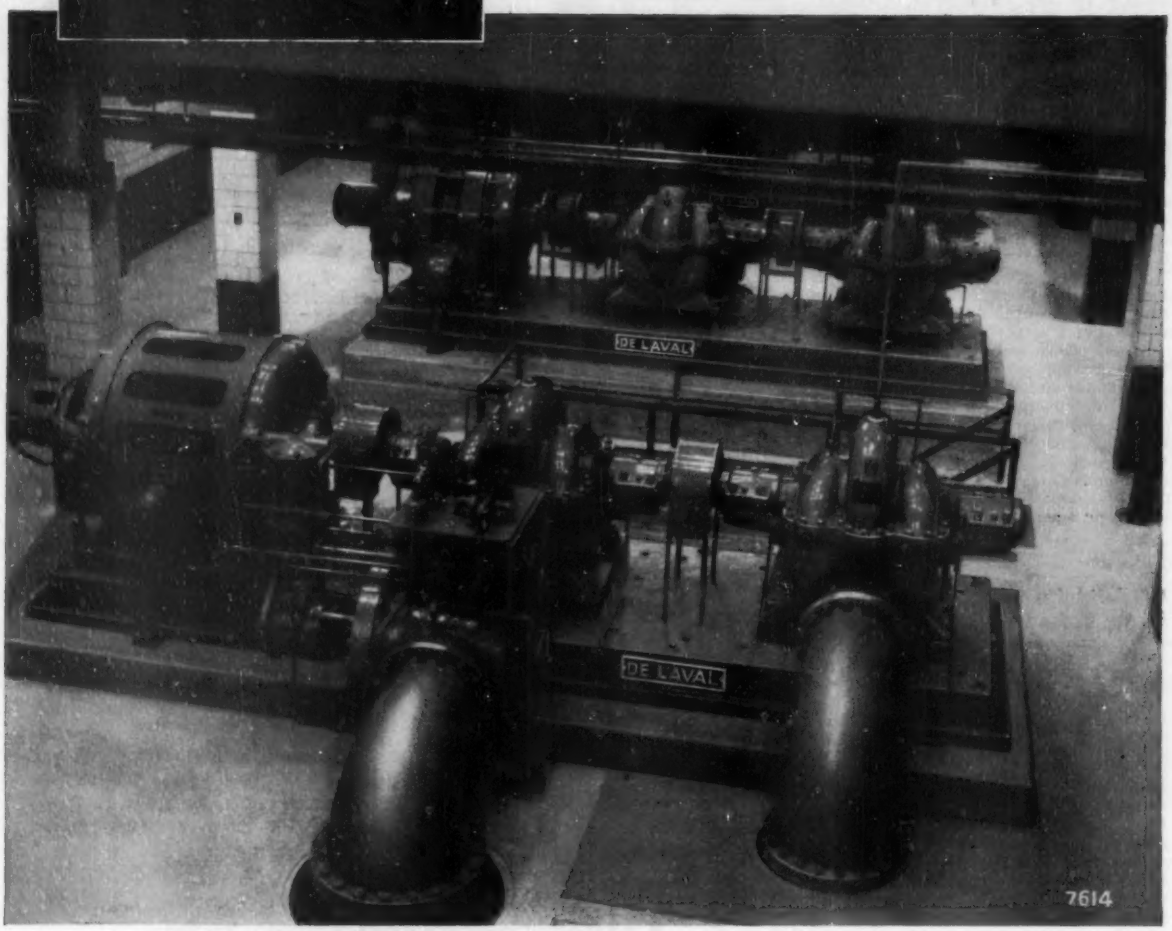

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Other Reports Received

Annual Reports

ENGLEWOOD, CALIF.—A Report to the People, September 30, 1953. Newspaper type. 4 pp.

FAIRBANKS, ALASKA — Military Impact on the City. This booklet is comprised of reprints of six newspaper articles, which are available from the *Daily News-Miner*. No charge as long as supply lasts. Illus. Unpaged.

HUNTINGTON PARK, CALIF.—Forty-Seventh Annual Report. Fiscal Year July 1, 1952 — June 30, 1953. Compiled by Agnes R. Platt, city clerk. 33 pp.

JACKSON, TENN.—A "Line On Your City Government." Annual Report 1952-53. Published by the Jackson City Commission. Newspaper form. Illus. Unpaged.

MOORESVILLE, N. C.—Annual Report 1952-1953. Presented by City Manager. Illus. Unpaged.

NEW HAVEN, CONN.—This is New Haven. Municipal Annual Report for 1952. Prepared by Mayor William C. Celentano and City Clerk Milton Rice. Illus. Tables. 56 pp.

Purchasing

RICHMOND, VA.—City Purchasing by B. K. Peterson. City Auditor and Purchasing Agent. 10 pp.

Recreation

GENERAL—A Guide to Free and Inexpensive Publications on Recreation and Leisure. National Recreation Association, 315 Fourth Ave., New York 10, N. Y. 28 pp.

GENERAL—Recreation Leadership. A manual of the skills of leadership in the use of leisure time—and the pholosophy, development, and program planning for the training of volunteer and professional recreation leaders. By Walter L. Stone, Professor of Sociology, Hanover College, Ind., and Charles G. Stone, Director of Recreation, Williston, N. D. Published by The William-Frederick Press, 313 W. 35th St., New York 1, N. Y. 81 pp. $2.

Planning, Housing, and Zoning

ALASKA—Charting Alaska's Progress. The biennial report of the Development Board, 1951-1952. Illus. Tables. 57 pp.

BALTIMORE CITY, MD. — A Study of the Characteristics of White Applicants for Public Housing, 1952. Research and Statistics Division of Housing Authority, 709 E. Eager St., Baltimore 3, Md. Tables. Graph. 28 pp.

CANADA — Housing in Canada. A Factual Summary. Central Mortgage and Housing Corporation, Economic Research Department, Ottawa, Canada. Vol. 8, No. 3. Tables. 121 pp.

CLEVELAND, OHIO — Annual Report of the Regional Planning Commission, 1952. Tables. 27 pp.

HANOVER, N. J.—A Comprehensive Guide for Development. Prepared by Scott Bagby and Weaver Pangburn, Planning Consultant, Upper Montclair, N. J. 1953. 51 pp.

PHILADELPHIA, PA. — Organizations for Metropolitan Planning. Submitted by Citizens' Council on City Planning, Philadelphia Housing Association, 1717 Sansom St., Philadephia 3, Pa. Map. 50 pp.

——West Poplar Redevelopment Area Plan. Philadelphia City Planning Commission, Market Street National Bank Building, Market and Juniper Streets, Philadelphia 7, Pa. July 1953. Illus. Tables. Map. 30 pp.

PITTSBURGH, PA. — City Planning Commission Report for Years 1951-1952. Maps. Graphs. Illus. 35 pp.

PORTLAND, MAINE — Back Cove Improvement Program. City Planning Board. July 1953.

PROVIDENCE, R. I. — Annual Report of the City Plan Commission for Fiscal Year Ended September 30, 1952. George Hurley, Chairman, Suite 103, City Hall. 6 pp.

SAN DIEGO, CALIF.—City Planning Commission Biennial Report. July 1, 1951-June 30, 1953. Illus. Maps. 36 pp.

SAN FRANCISCO, CALIF. — Report on the Tentative Plan for the Redevelopment of Western Addition Project Area Number One. November 1952. Redevelopment Agency of the City and County of San Francisco in Cooperation with the Department of City Planning. Map. Unpaged.

Public Safety

GENERAL — Seventh Annual Peace Officers Training School. This report has been prepared by the Governmental Research Center, University of Kansas, Lawrence. Special Report No. 44. August 1953. Illus. 99 pp.

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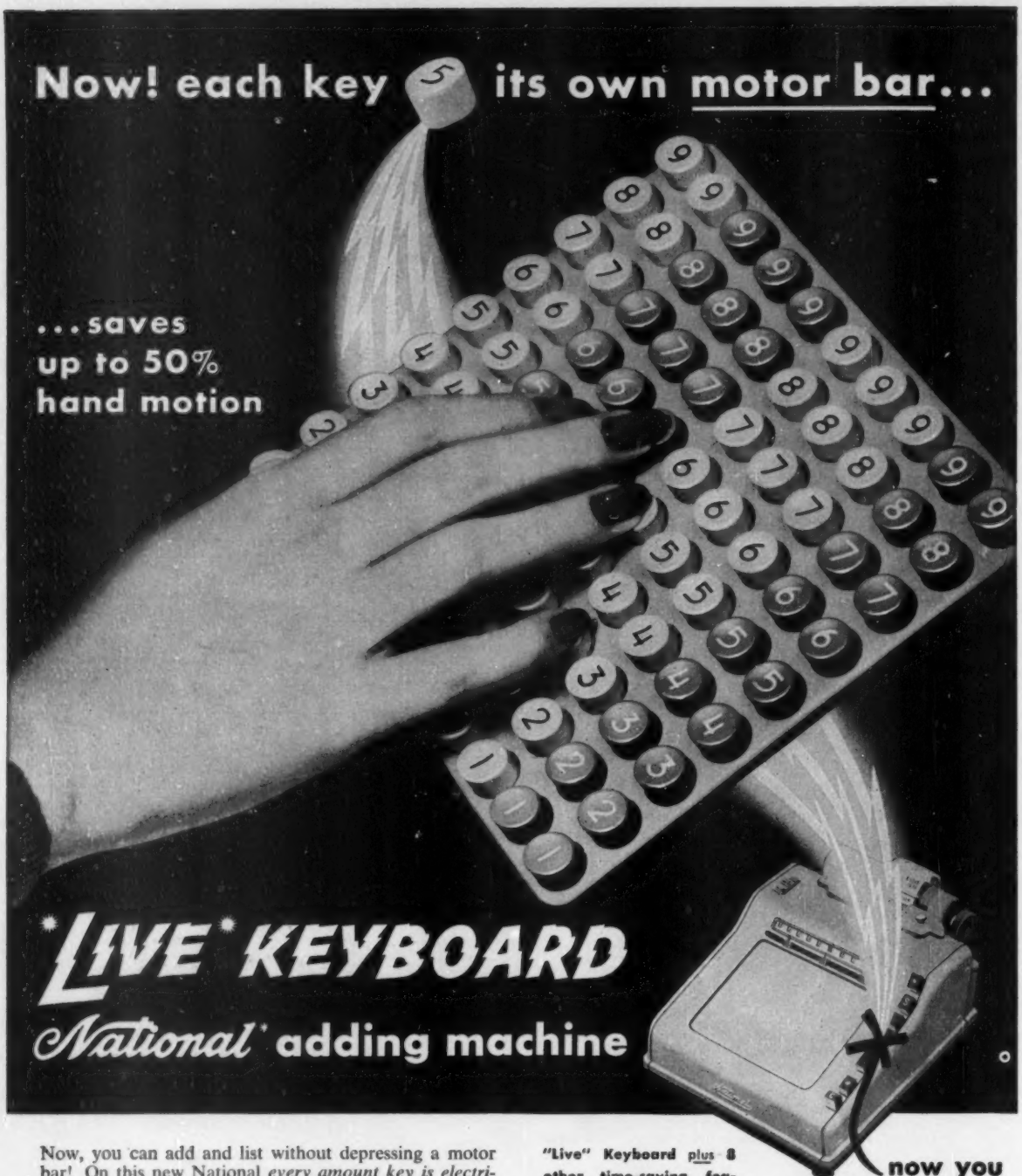

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Administration and Government

COOK COUNTY, ILL.—This Is Cook County, by Ruth E. Baker. Cook County Council of the League of Women Voters, 225 N. Michigan Ave., Chicago 1. Illus. Tables, Graphs. 76 pp. 35 cents.

INDIANA—Indiana Licensing Law by Warner O. Chapman and Oliver P. Field. Bureau of Government Research, Department of Government, Indiana, University, Bloomington, Ind. 77 pp. $1.25.

MILWAUKEE, WIS.—"The Milwaukee Way." A quick look at good local government. This is reprinted from the city's complete annual report, a copy of which can be obtained at the Municipal Reference Library, in City Hall. Illus. Tables. 15 pp.

NEWARK, N. J.—Municipal Year Book 1952-1953. City of Heritage and Opportunity, founded 1666. Prepared under the direction of Harry S. Reichenstein, City Clerk. Illus. Tables. 94 pp.

TEXAS—Texas Presidential Politics in 1952, by O. Douglas Weeks. Public Affairs Series Number 16. Institute of Public Affairs, University of Texas, Austin. Map. 116 pp.

Finance and Taxation

FLORIDA—Debt Problems of Florida Municipalities, by Wylie Kilpatrick. Civic Information Series, No. 14. Public Administration Clearing Service of the University of Florida, Gainesville, Fla. 1953. Tables. 30 pp.

HAZARD, KY. — Economic and Industrial Survey of Hazard, Ky. Prepared by Chamber of Commerce and the Agricultural and Industrial Development Board of Kentucky. Map. 12 pp.

JACKSON, KY. — Economic and Industrial Survey of Jackson, Ky. Prepared by Jackson Kiwanis Club and the Agricultural and Industrial Development Board of Kentucky. Map. 12 pp.

MOUNT DORA, FLA. — Financial Report to the Taxpayers of Mount Dora. 1953. Illus. Tables. Unpaged.

PORTLAND, ORE. — Annual Report of the City Auditor for the Fiscal Year Ending June 30, 1953. Tables. 136 pp.

WASHINGTON — Report on the Financial Transactions of the Incorporated Cities and Towns of the State. Olympia. 1952. Tables. 348 pp.

Traffic

CHICAGO, ILL.—Report on Parking Facilities for the City of Chicago—Central Business District, 63rd and Halsted Shopping Center, North Michigan Avenue Area, Parking Meters. September 1952. De Leuw, Cather & Co., Engineers, Chicago, Ill. 150 North Wacker Drive. Tables. Illus. Graphs.

OAKLAND AND SAN FRANCISCO—Parking as a Factor in Business, Part IV. Central City Property Values in San Francisco and Oakland. Highway Research Board, 2101 Constitution Ave., Washington 25, D. C. By Paul F. Wendt, Bureau of Business and Economic Research, University of California. 1953. Tables. Maps. 158 pp.

Streets

BEVERLY HILLS, CALIF.—Report from Your City Council on Your City Streets. Vol. 1. No. 1. December 1953. Illus. Unpaged.

Public Works

NORWALK, CONN.—60th Anniversary Report, Board of Electrical Commissioners of The Taxing District, City of Norwalk, Conn. Available from the South Norwalk Electric Works, State Street, South Norwalk, Conn. 1953. 62 pp.

TENNESSEE—Bid Data on Current Municipal Public Works, by M. U. Snoderly. Technical Bulletin No. 21. December 1953. Municipal Technical Advisory Service, Box 8260, University Station, Knoxville, Tenn., in cooperation with the Tennessee Municipal League. Tables. 49 pp.

WISCONSIN—Public Works Administration. Papers Presented at the 1953 Institute for Public Works Officials. Issued by the League of Wisconsin Municipalities, 30 E. Johnson St., Madison 3, Wis. 27 pp. $1.

The Annual Index

listing by subjects and by cities the articles and items published in *The American City* for the 12 issues for 1953 will be available without charge to subscribers for the magazine. Address requests to 470 Fourth Ave., New York 16, N. Y.

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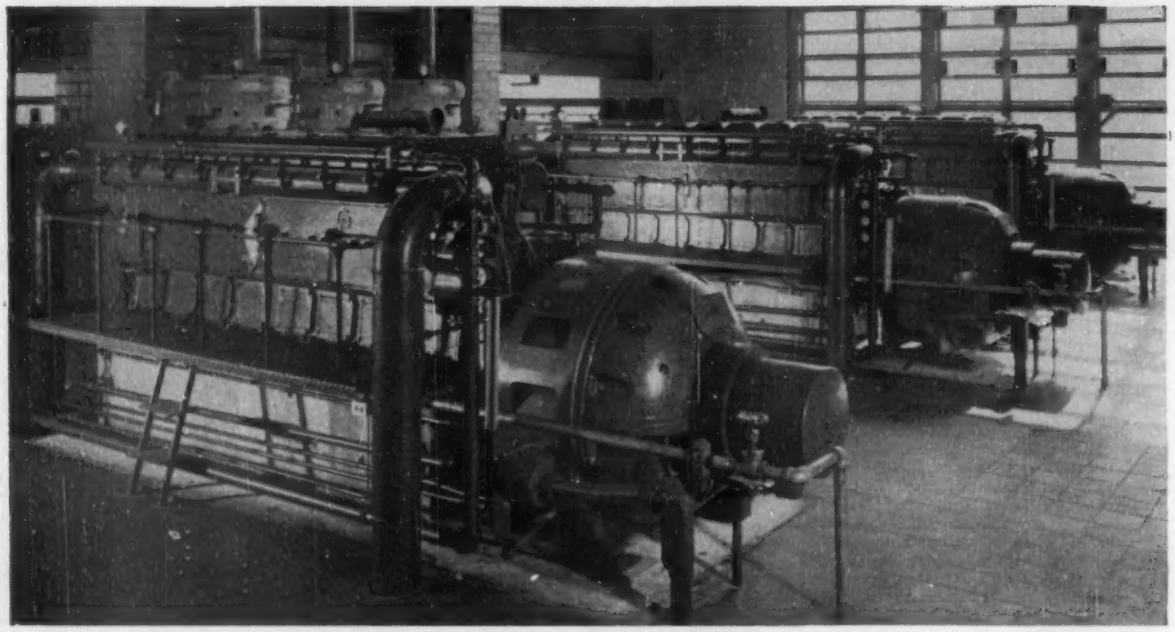

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A Model County and Municipal Bond Law

AN ATTEMPT to meet long-standing problems of municipal borrowing and of investment in municipal bonds has been announced by the National Municipal League, with the publication of its new Model County and Municipal Bond Law.

The proposed statute provides for uniform procedure in the incurring of municipal debt. Some $22,000,000,000 of municipal securities are outstanding and new issues of this nature amount to $4,000,000,000, or more, annually. Expert opinion holds that each state should have a comprehensive municipal bond law to assure, in so far as possible, that debt is set up and administered on a sound basis.

Mutual Effort of Experts

The model now developed represents the mutual effort of a number of legal and other experts. It is one of a series prepared by the League's Committee on a Program of Model Fiscal Legislation. In draft form this model law has been circulated over a period of years among some 200 municipal and state finance officers, investment bankers, bond attorneys, and other qualified persons, from whom suggestions were sought and received.

Where local governments require a referendum for the authorization of bond issues, the model law preserves this practice. An additional safeguard is included where a referendum is not already required. In such cases a permissive referendum upon petition of voters in the community is provided.

The form of the local bond resolution or ordinance is purposely made simple so that it may readily be understood by the electorate. At the same time it provides a maximum of information to assure the governing body's awareness of the significance of increasing the locality's debt, and also protects investors.

The law emphasizes that bonds should be retired within the period of usefulness of facilities being financed. The use of serial bonds payable in consecutive annual installments is required. Maximum periods of usefulness for all classes of projects are prescribed. For example, a period of 35 years is prescribed for water systems, 30 years for sewer systems, 20 years for parks, 10 years for police and fire alarm systems, etc.

An important provision of the law is the requirement that a "down payment" of at least 5% of the estimated maximum cost of the project be made available by appropriation when the project is undertaken. This arrangement is in use in Massachusetts, New Jersey, and New York.

Sections of the law dealing with debt limitation are presented after careful consideration of the problems involved in general debts limits. (This fact is made clear in the introduction.) It is also emphasized that a ceiling must be placed upon municipal borrowing power to prevent debt expansion beyond local fiscal capacity. The traditional method of a fixed percentage of assessed valuation of taxable property is used in setting limitations on general obligation borrowing. To make this index of local economic resources and fiscal ability more realistic, although still by no means ideal, only valuations of real property are used. Manipulation of assessment to circumvent debt limitations is made difficult by using the average assessments for the last three years.

In calculating net indebtedness

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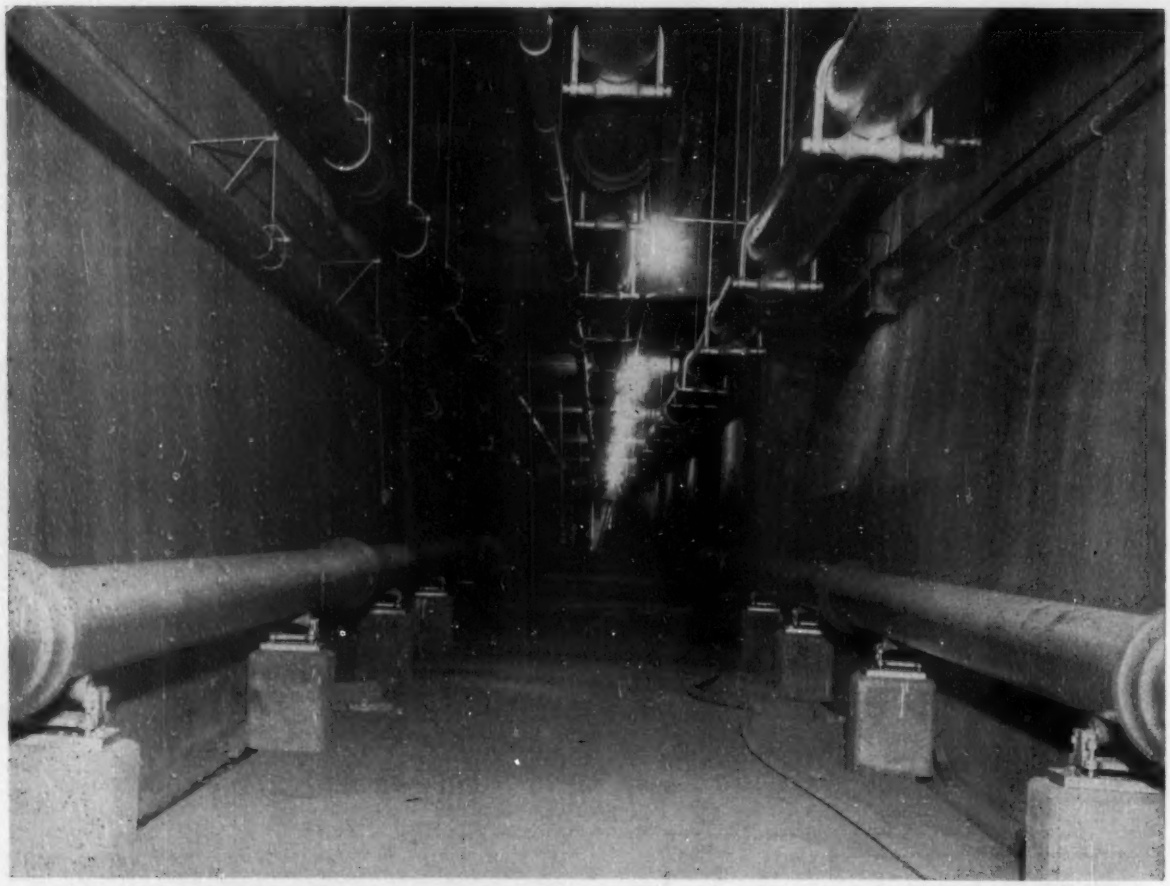

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AMERICAN pipe is conveying sewage, water, gas, crude oil, gasoline, sour naphtha, salt brine and chemicals under operating pressures ranging from a few pounds to the square inch up to pressures in excess of 100 pounds gas and 500 pounds liquid.

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AMERICAN works hand-in-hand with engineers, contractors and superintendents in solving piping problems in their respective fields. Refer your next piping problem to AMERICAN and utilize both our extensive manufacturing facilities and our nearly half a century of experience in furnishing pipe and fittings for water works and for sewage disposal plants.

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Write for free literature, stating the kind of joint in which you are interested. Address the AMERICAN office nearest you.

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subject to limitation, the law excludes bonds and notes outstanding for the finance of self-liquidating public service enterprises as well as for certain special revenue bonds.

The sales provisions of the law are designed to induce competitive bidding for the bonds and to help as far as possible in securing the lowest interest cost. At the option of the municipality, the notice of sale may permit multiple rate bidding.

Copies of the Model Law are available at $1 per copy from the National Municipal League, 299 Broadway, New York 7.

Cleveland Area's New Local Officials Get Special Briefing

MORE THAN 100 newly elected officials in Cleveland and its 59 suburbs went to "school" recently, with 10 of the community's veteran municipal officers and civic leaders as the "teachers."

The unique Good Government Institute, December 17, for mayors, councilmen, and other new officials of cities and villages was planned by *The Cleveland Press*, Ohio's biggest daily newspaper. Co-sponsors were Western Reserve University, the Cuyahoga County Mayors Association, and the Citizens League.

The program itself was preceded by a recognition dinner given by *The Press* in Hotel Cleveland, with Editor Louis B. Seltzer presiding. Moderator was Robert H. Rawson, Citizens League president, prominent businessman, and assistant professor of political science at WRU.

The big problems of general administration, public service, money, and legal tangles were discussed and so was the even bigger question, "You and Your Neighbors," in which regional problems that know no municipal boundary lines were considered.

Service was especially stressed by the "teachers," who urged the new public officials to remember they are servants, "never bosses." The speakers, including three mayors, two city managers, one councilman, a law director, a college professor, and the Regional Planning Commission director, urged public and immediate airing of all municipal problems.

George F. Quinn, attorney and president of the Council in Lakewood, the county's largest suburb reminded new officials that "the popular side of an issue isn't always the proper side to take."

City employees always should be "keyed up" to respond instantly to emergencies, the new officials were warned by Kenneth J. Sims, for 16 years mayor of the large and heavily industrial community of Euclid.

"Have both guns loaded when you go before the County Budget Commission," warned Ray Martin, now city manager of Cleveland Heights and formerly its finance director.

The university's apprentice public service program, which places would-be young officials in responsible municipal posts, was detailed by Norton Long, political science professor.

As a result of the enthusiastic response to the Institute, *The Press* is compiling a Good Government Guide, which will include resumes of the speakers' talks and their answers to questions. Also considered is another institute, on a larger scale, after the next municipal election in 1955.

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4 REASONS why more miles of cast iron water mains are joined with LEADITE than with any other melted self-caulking material:

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No Caulking

just a PINCH OF SALT

is all you need for efficient, low-cost Ice and Snow Control.

½ ounce of de-icing *salt* per square yard, applied *the "Scotchman-Way"* is all you need. Why? Because *the "Scotchman", the air-blast spreader,* lays down a *perfect melting pattern*—no rings, no streaks, no waste.

The "Scotchman-Way" of winter pavement maintenance is *50% CHEAPER* and *8 times FASTER* than using treated abrasives.

Here's a Modern spreader: 1. that spreads *bagged or bulk material,* from *any truck* at any desired rate; 2. that has *more stainless steel* in its construction; 3. that is *self-powered* by an *electric starting engine* operating in filtered air; 4. that *saves its cost* in the first few hours of operation.

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It's the Reflecto-Liner, Jr. and it's the budget's best buy for 1954. Unbelievably low priced, this mighty mite will give you big-machine striping performance on every job. From its mono-unit frame to the ample 9.3 cu. ft. compressor, this machine is a splendid example of Wald's carefully researched engineering. Maximum efficiency for applying either plain or reflective traffic paints is assured with the powerful 4 cycle, 2.5 horse-power engine and large 5 gallon paint supply tank. The vertical, horizontal and radial adjustments on this easily maneuvered machine offer extreme versatility and permits laying of 2"-4" lines right up to the curb.
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The Urban Frontier

THE HISTORIANS tell us that the American frontier closed in 1892, and now that the wilderness has practically disappeared, cities constitute the new frontiers of adventure for the men and women of today. Cities have their jungles, their well-nigh impenetrable central business districts, their unmarked and almost impassable trails, their cataracts and whirlpools of traffic, and their hazards of automobile ambush.

The experienced explorer makes a lifetime of conversation from one tall tale of a herd of charging elephants, but the American city dweller faces careening masses of freight trucks, buses, and trolleys by the score every hour. The taming of the city, if you please, and the making of it a place for convenient, healthful and pleasant living offer perhaps one of the greatest adventures of modern civilization and a challenging problem and opportunity.

From "City Planning in the South," an address by Lloyd W. Chapin, Dean of Faculties, Georgia Institute of Technology, before the Southern Regional Congress on City Planning at Roanoke, Va., August 1953.

A Rich Vein of Untold Civic History

UNDER this heading the Municipal League of Seattle and King County, Washington, in its *Municipal News* of January 9, 1954, comments on a recommendation made by the League's School Committee in its recent report on "The Making of a Seattle Citizen."

This suggestion was that: "As much as possible should be given . . . to the continuing struggles for democracy in ancient, medieval and modern cities, noting the valiant battles for charters and 'ancient liberties' in individual cases." Also, "An appreciation should be developed in future citizens for the nine major municipal services and privileges which they enjoy. This can be done by tracing their evolution from early beginnings and will disclose an untapped treasure-trove of interesting history. . . .

More Palace than Town Hall

"Maybe one shortcoming in the teaching of medieval and ancient history in the past is that events in the castle, palace, court and on the battlefield have been emphasized more than those in the town halls and homes. The panorama of municipal history sparkles with incidents which are every bit as thrilling as those in national histories. Also, democracy has burned brighter and longer in cities than in national governments.

"The result is that the average American citizen has the impression that most good things we now enjoy were started in 1776, or thereabouts—that there were no concepts or experiences in democracy or self-government before the American Declaration of Independence. This erroneous impression has led to that most dangerous assumption that somehow democracy will always be an intrinsic part of our government fabric no matter how much we abuse or neglect it."

What New Enterprises Expect of Chambers of Commerce

To the Editor of THE AMERICAN CITY:

YOUR Chamber of Commerce readers may be interested to know that in a recent study the writer analyzed the location processes of 116 new manufacturing firms in Utah and Colorado. In each case the owner or manager of the firm was quizzed as to what migrant firms or new enterprises expected of a local Chamber.

The comments of the various officials indicated that entrepreneurs are not interested in flamboyant statements about a community's virtues. Rather, they are interested in factual statements about sites and buildings available, railroad siding, labor force and community history in labor relations, competitors in the area, public utility services, schools and other cultural institutions, etc.

The Colorado experience since the war has pointed up the part in industrial location that a Chamber of Commerce with an alert, aggressive secretary can play. In Colorado Springs, for example, it is a matter of record that since 1945 over 60 desirable businesses have migrated there. These businesses did not come to Colorado Springs by accident. They were sought by an active Chamber of Commerce, and they were sold on the city much like dad is sold a new car by an automobile salesman. The writer has had the opportunity to visit with nearly all of the owners and managers of the new firms in the Springs. Without exception, Chamber activity is singled out as one of the strongest motivating forces orienting industry to this western community.

JOHN D. GARWOOD
Associate Professor of Economics
Fort Hays Kansas State College
Hays, Kans.

Handbook for Bicycle Riders

SANTA CRUZ, CALIF., has made good progress in controlling its 1,500 youthful bicycle riders and "selling" these future motor-vehicle pilots on the importance of basic traffic regulations, reports R. N. Klein, city manager.

The prime tool used for this objective is an ingenious and readable little booklet, "So You Like a Bike," which has been introduced by the Juvenile Bureau in all elementary schools. The "bike booklet" is issued with each "bike" license as an operating manual and record of the owner's registration.

Two city employees did the multilith work and cartoon illustrations for the booklet, and 2,000 copies were reproduced for $150.

3 good reasons for choosing a Nichols Monohearth

1 Jacksonville, Florida, Southside plant, 1946. Daily capacity 120 tons. Nichols Monohearth equipped.

2 Jacksonville, Florida, 5th Street, 1947. Daily capacity 350 tons. Nichols Monohearth equipped.

3 Jacksonville, Florida, Riverside plant, 1950. Daily capacity 300 tons. Nichols Monohearth equipped. This fine plant is shown at the right.

Good salesmanship may sell a product the first time, but only proved performance can recommend it again and again to the same client. Jacksonville, Florida presents three good reasons why your community should install a Nichols Monohearth Refuse Incinerator.

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70 PINE ST., NEW YORK 5, N. Y.
1637 N. Illinois St., Indianapolis 2, Ind.
40 S. Los Robles Ave., Pasadena 1, Calif.
1477 Sherbrooke St. W., Montreal 25, Canada

SPEED UP

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IMPROVE

YOUR CITY GARBAGE COLLECTIONS

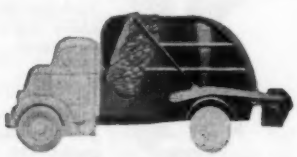
Heil 10-cu. yd. Colecto-Pak compresses 20 yds. of garbage into 10 yds.

Heil Colecto-Pak's low loading height makes it easy for your crews to handle refuse and garbage without exertion or spilling.

HERE'S the fast, easy, *better* way to assure the best possible garbage collection service for your city. The Heil Colecto-Pak is totally enclosed to eliminate ugly sights and smells. It's watertight to prevent unsanitary dripping of liquified wastes. The hydraulically operated packer plate compresses the load to eliminate waste space . . . bigger loads mean fewer trips to the dump. Finger-tip operating controls, either in the cab or at the side of the body, make loading, packing and discharge simple and easy for inexperienced labor. Quick, clean final discharge of the well-packed load is assured by the famous Heil Twin-Arm Hoist that raises the tapered, easy-to-dump body to a 45° angle in 12 seconds.

Whether you need just one or a whole fleet of garbage collection units, be sure to investigate the Heil Colecto-Pak before you buy. Write today for a complete description of time and money-saving features.

Cut-away view shows bucket dumping and packer plate in open position. As the bucket returns, the packer plate compresses the load.



With the bucket ready to receive another load, the packer plate is in closed position. Material is packed tightly into the rear of the body.

THE HEIL CO.

GB-2

Dept. 4324, 3043 West Montana St., Milwaukee 1, Wis.

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ELEVATING TAILGATE

CONVERSION HOIST

CONTRACTOR'S BODY

View of Fire Department Communications

IN REVIEWING THE PROGRESS made in fire communications, let us consider the categories separately.

Progress in Wire Communications has been slower, and the need greater, than in any other detail of fire-service communications. Aside from vocal alarm features there have been no radical betterments. The vast majority of municipalities have failed to keep pace with the expansion of their cities with fire-alarm signal-box coverage. In too many cities the entire fire-alarm system is neglected and poorly maintained.

Supervised Alarm Systems: Fire chiefs should insist on the installation of supervised interior industrial fire-alarm systems that permit transmission of alarms directly to the local fire department. They should be installed in summer resorts and institutions to transmit an alarm to the fire department and alert occupants.

False Alarms: Their continual increase is of growing concern to all city governments and in the near future more effective remedial measures must be undertaken. It certainly cannot be said that we are presently attempting any serious corrective procedures.

Wireless Communications: Ten years ago only six cities had their own fire-department radio frequencies. (Many fire department radio systems shared frequencies jointly with police or other agencies.) Today, the radio has been "sold" to the fire service. Soon every progressive fire department will enjoy it, with benefit to the nation. Progress is so rapid that many departments have not as yet fully explored its possibilities.

Are you making full use of your present system and incorporating, as an auxiliary, the taxicab service, marine telephone, tugboats, motorboats, motor cruisers, telephone equipment, private cars, common carriers, over-the-road trucks, railroads, and aviation services? Each single radio installation in each of these systems is in effect a "traveling fire-alarm box."

From a paper delivered at the 80th Annual Conference of the International Association of Fire Chiefs, Toronto, Ontario.

THOMAS P. O'BRIEN
Deputy Chief
Bureau of Fire Alarm Telegraph

. . . with this

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It has been demonstrated under rigid test conditions that increases in incinerator plant capacities up to 50% are obtainable along with 50% lower labor cost per ton burned. Information concerning these tests, descriptive literature, and technical information are available. Write today . . .

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FOR THE "RIGHT" ANGLES USE
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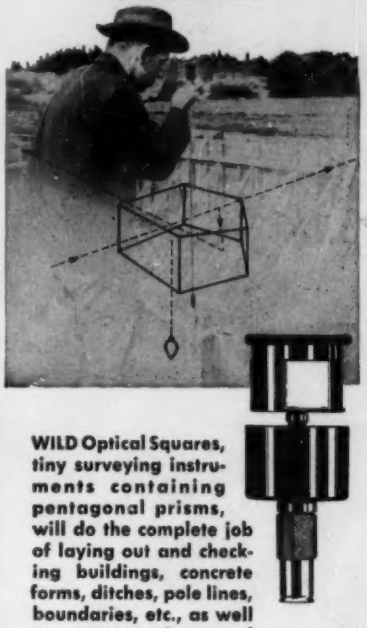
OPTICAL SQUARES THE "WATCH POCKET" TRANSITS



WILD Optical Squares, tiny surveying instruments containing pentagonal prisms, will do the complete job of laying out and checking buildings, concrete forms, ditches, pole lines, boundaries, etc., as well as cross sections and topo maps.

These handy tools actually fit your watch-pocket. They require no field adjustment and little or no practice for use.

Single Pentagonal Prisms $19.00
Double Pentagonal Prisms $26.25
Plumbing Rod (Optional) $26.25
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Extensive repair and servicing facilities by factory trained specialists.

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SURVEYING INSTRUMENTS SUPPLY CO.
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This Hersey Detector Meter with a bronze case Compound Meter on its by-pass will do a better job in measuring all rates of flow than any other combination of meters on the market.

Approved by the National Board of Fire Underwriters in 6" 8" 10" sizes

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SOUTH BOSTON, MASS.

BRANCH OFFICES: NEW YORK — PORTLAND, ORE. — PHILADELPHIA — ATLANTA — DALLAS
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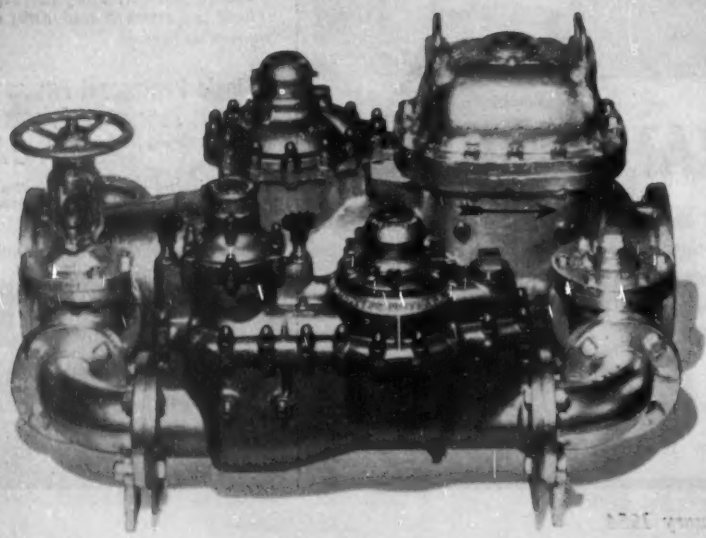

Hillsboro, Ohio, Fire Department Has 2 Boats

Scott Air-Paks are standard rescue equipment on both the Hillsboro Fire Department's Evinrude-powered rescue boats.

BOATS HAVE become necessary equipment for fire departments in cities situated on or near bodies of water. The outboard-motor type is the most flexible and efficient. We have built two boats in our fire station, powered respectively by 7½-hp and 25-hp Evinrude outboard motors.

Many calls come to us requiring use of the boats. Some are for rescues, others for the recovery of objects. The boats have been used to fight fires around lakes or reservoirs which could not be reached effectively by other means. In such instances, we use a portable pump throwing up to 300 gpm.

In rescue work we use Scott Air-Paks. We also find that a sealed-beam battery light is a useful device at night or where visibility is poor. In underwater search, a "telescope," consisting of a box 3 to 4 feet long and 6 to 8 inches square with glass over one end, is used.

FRED BENNETT
Fire Chief
Hillsboro, Ohio

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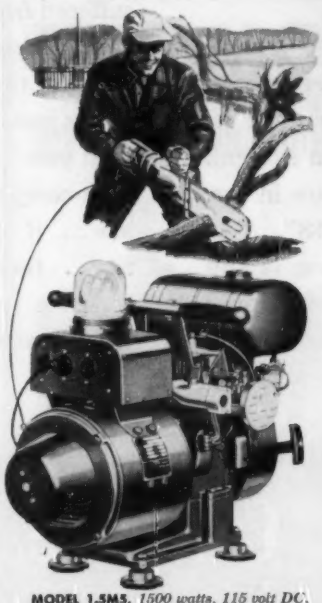

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Save with on-the-job electricity

Low-cost portable model moves jobs faster. Operates chain saws, carpenters' saws, pipe threaders and cutters, hedge trimmers, grass shears, pruners, drills, other tools having universal (AC-DC) motors. Weighs only 101 lbs. Handles for carrying.

Other sizes, 500 watts to 30 KW, for trucks, street repairs, police and fire departments, electro magnets. Stand-by models protect hospitals, sewage treatment plants. communication systems, public buildings, when central station power is cut off. Write for folder 17-S.

Kohler Co., Kohler, Wisconsin. Established 1873

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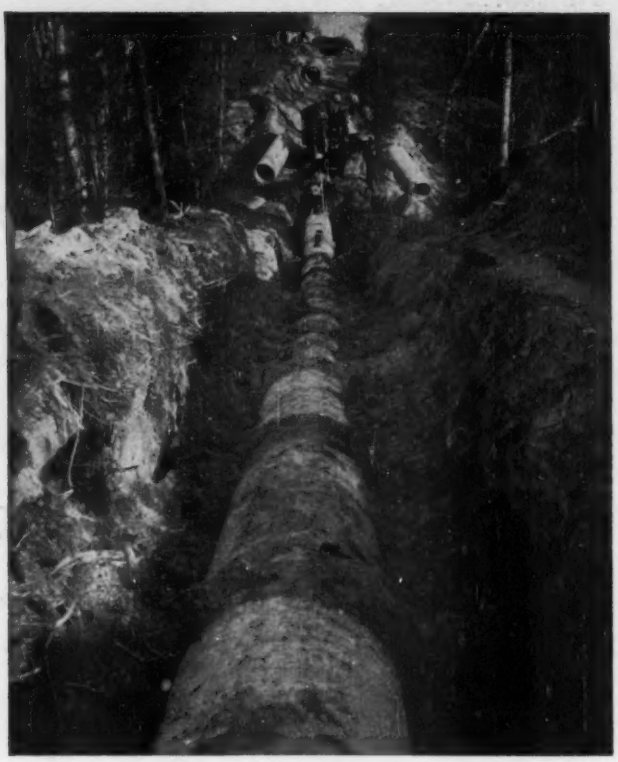
AIR-COOLED ENGINES • PRECISION CONTROLS

Norfolk Prefers Concrete Pressure Pipe



Since 1921, Norfolk, Virginia, has been specifying concrete pressure pipe for its water supply and distribution system. Over 450,000 feet of pipe is now in use. Diameters range from 20″ to 48″.

Still in excellent condition is the 31,700 feet of concrete pressure pipe laid in 1921. There has been no necessity to take this pipeline out of service for any maintenance work; nor has the pipeline suffered from any trouble due to electrolytic action. This pipe is now carrying water at the same high capacity as when it was installed.

If your city wants pipe with an assured high-carrying capacity, decade after decade . . . if long term economy is a necessity . . . then look into the advantages of concrete pressure pipe when you plan your next transmission or distribution lines.

Member companies manufacture concrete pressure pipe in accordance with nationally recognized specifications

Concrete PRESSURE Pipe

WATER FOR GENERATIONS TO COME

AMERICAN CONCRETE PRESSURE PIPE ASSOCIATION
228 North LaSalle Street
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Safe Driving in Business District Fairylands

SOME OF THE MANUFACTURERS of the best traffic-signal lamps are offering ever-more-brilliant colored flood lamps. A pioneer is the Amplex Corporation, of Brooklyn, N. Y., which announces a veritable rainbow of outdoor colors: royal blue; turquoise blue; nile green; straw; golden amber; rose pink; surprise pink, and ruby red.

None can doubt that these "new" colors can add to the excitement of the city night scheme. They are a tribute, also, to the universal acceptance and understanding of traffic signals and to the engineering thought applied to their logical location. It doesn't seem long ago that articles and papers discussed adversely the dangerous confusion caused by the large red and blue bottles and retorts that characterized drug-store windows and the growing use of neon signs.

Traffic signs have won their place in city usage by standardizing that place. That place is where the driver instinctively looks to find a traffic signal to guide him. That is the spot where the traffic engineer tries to have the signal. It should be on "that" corner and preferably on all four corners of a simple intersection, and on all the corners and islands of a complicated intersection.

A 150-watt colored flood lamp for outdoor or indoor service without filter and with a life expectancy of 2,000 hours.

When traffic signals are correctly located, the other colored lights of the night scene create minimum competition. The guiding lights are where they belong. The advertising lights are where they happen to be and, though their handsomeness may induce some head-turning, they will not be taken for traffic lights. The increasing use of colored flood lamps may increase driver alertness due to the greater interest and stimulation of the ride. In addition to the right outdoor colors, Amplex offers for window display these additional colors: blue-violet, deep green, canary yellow, amber orange, old rose, and magenta red.

With the best in street lighting and engineered traffic signals, the artistically illuminated windows and the bold outdoor advertising displays and colorlighted facades, may make the business districts ever more magnetic at night.

Ice Skating in New York Proves Popular

MORE THAN ONE MILLION visitors have already made use of the ice-skating facilities of the Wollman Memorial in New York City's Central Park, operated by the City Park Department since December 21, 1950. Ice has been maintained for 530 days.

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THE MODERN WAY

TO LIFT SEWAGE AND SLUDGE AT TREATMENT PLANTS

USE BLACKBURN-SMITH PNEUMATIC SEWAGE EJECTORS

Duplex Sewage Ejector, showing inlet piping.

PREFERRED by most prominent consulting engineers as **LESS MESSY MORE SANITARY** than centrifugal submerged type sewage ejectors or pumps.

ENDS CLEANING of screens and pumps.

LIFTS STRAIGHT UP, 150 feet capacity, once a minute, without fail.

30 to 500 GPM in both single and twin units against high discharge heads.

Over 60 years service has proved the rugged worth of Blackburn-Smith Ejectors. Yet our today's product is full of exclusive modern features such as: 1. Float and electrical float switch controls. 2. Float and pneumatically controlled snap action valve. 3. Electrode controls.

Any one of the above, with or without Air Receivers.

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DELIVERS WATER CHEAPER

Philadelphia Dresser-Couples 2-mile steel main in expanding program of general waterworks improvement.

In adding to many miles of Dresser-Coupled steel mains laid since the War, Philadelphia engineers again recognized the outstanding advantages of this type of construction. These twin steel lines meet the needs of central and southern Philadelphia.

Dresser-Coupled steel mains are a sound investment. The beam strength of steel pipe, plus the non-rigidity of both pipe and couplings, assures a husky, flexible, permanently tight line. Glass-smooth linings sustain high carrying capacity. Dresser-Coupled installations fit in well with existing structures . . . are readily adaptable for future changes.

Actual installation is fast and relatively simple. Lighter weight steel pipe is easier to handle. Long pipe lengths mean fewer joints. Small crews, with a minimum of skill, supervision and heavy equipment, make joints faster, surer. The result—lower cost, maintenance-free lines.

BE SURE **you get the *best* line at the *best* price. Always put steel pipe and Dresser Couplings in *your* specifications.**

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Dresser Manufacturing Division, 69 Fisher Ave., Bradford, Pa. (One of the Dresser Industries). Warehouses: 1121 Rothwell St., Houston, Texas; 101 S. Bayshore Highway, South San Francisco, California. Sales Offices: New York, Philadelphia, Chicago, Houston, South San Francisco. In Canada: Toronto, Ont.

Purchasing News

Information for officials interested in equipment and services for the construction, operation and maintenance of municipal utilities

Emergency Electric Set Relieves City After Power Plant Explosion

Rimouski's mayor, Dr. Victor Lepage (fourth from right), and City Manager Leopold Garon (second from left), pose in front of the Cat D397 with (left to right): Bob Burdick, Caterpillar Tractor Co.; Greg Aube', Hewitt Equipment Co.; Abbot Gullaume Dionne, administrator at the Seminary; Rev. Sister St. Jean Gabriel, hospital superior; Rev. Sister San Antonio, hospital administrator; and Lisette Morin of the Rimouski newspaper, *Le Progres Du Golfe*.

Several months ago a mobile diesel electric set was rushed to Rimouski, Province of Quebec, Canada, where an explosion in the city's power plant reduced power to nearly one-half its normal capacity. The set, a Cat D397, furnished power for the 300-bed St. Joseph Hospital, kept school and living facilities for more than 2,000 students and instructors in the town's school system operating, and serviced the main telephone exchange.

When news of the emergency at Rimouski reached Bob Burdick and Marion Breen of the Caterpillar Tractor Co., they were in Albany en route to Vermont with the Cat D397. The men immediately embarked on the 700-mile trip to the Canadian province, where they connected the set. Instantly, current began flowing into the hospital and the Seminary of Rimouski. The Rev. Sister St. Jean Gabriel, Superior at the hospital which had been without light or heat for hours, said the unit "was sent by God."

The engine was able to power the Archbishop's Palace, the Technical, Commerce, and Marine schools, the orphanage, telephone exchange, cathedral, and parsonage as well. Later, Hewitt Equipment Ltd., Caterpillar dealer at Montreal and Quebec, supplied the area with three additional units and a technician to operate them, until an extra power source was made available.

To provide municipalities with adequate facilities to cope with power failure, get details from the Caterpillar Tractor Co., Peoria, Ill. Write directly, or use the Post Card on the colored page in this section. Circle No. 733.

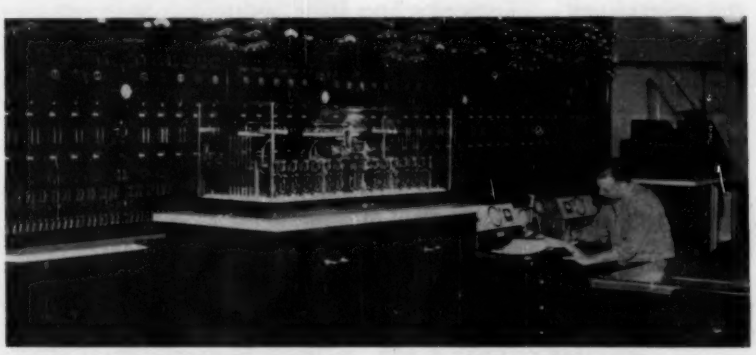
How Erie, Pa., Protects Its Communications System

A breakdown in your communications system, warns this manufacturer, may cripple police, fire, water and every other vital municipal service. Recognizing this, city officials of Erie, Pa., have equipped power supplies to essential services with stand-by electric power.

The Erie police radio, for instance, uses a Kohler stand-by electric plant at its central station, and another at its transmitter several miles away. At the City Hospital an electric plant is on duty to provide power for iron lungs.

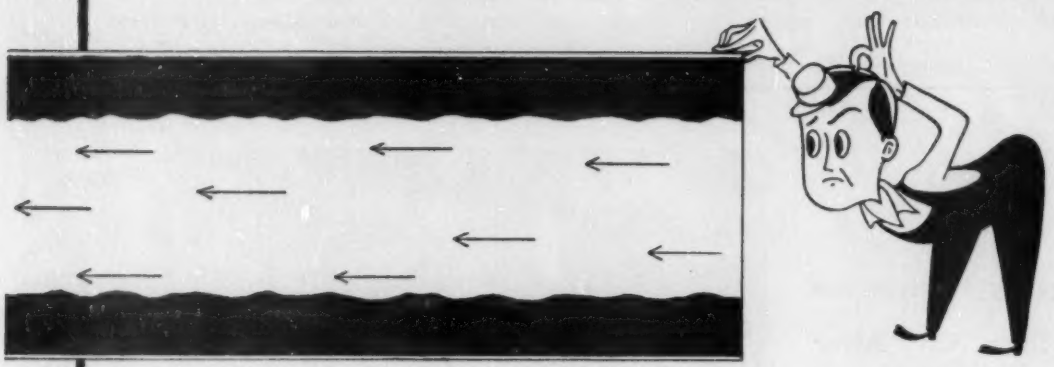
These plants are made by the Kohler Co., Kohler, Wis., and each is ready to go into action the instant your central power fails.

Literature describing the equipment is available from the manufacturer. Write directly, or take advantage of the Post Card on the colored page in this section. Circle No. 736.

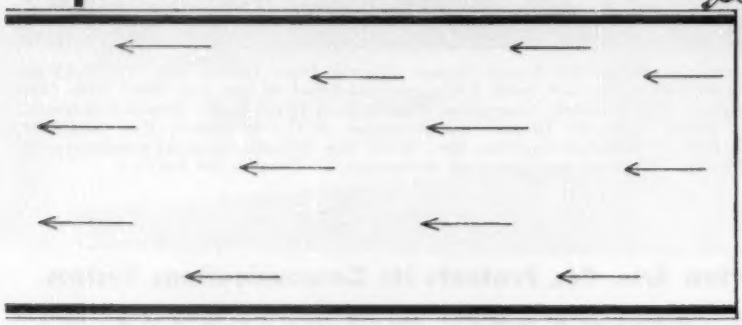


These controls, linking all fire-call boxes to one panel that indicates fire locations, are protected against power failure by a Kohler electric plant.

LOW FLOW CAPACITY



High Flow Capacity



...Bitumastic 70-B Enamel makes the difference by preventing corrosion

Flow capacity *stays* high when Bitumastic® 70-B Enamel protects interior surfaces of steel pipe lines. This durable enamel prevents rust, corrosion, incrustation and tuberculation . . . keeps pipe lines from "shrinking." With this kind of protection, there's no need to spend money on *over-sized* pipe in order to allow for future loss in flow capacity. Flow tests conducted on steel pipe lines, centrifugally lined with hot Bitumastic 70-B Enamel, have shown the value of Hazen-Williams coefficient "C"=145 to 160.

BITUMASTIC 100TH Anniversary PROTECTION 1854 1954

You can save money in another way with Bitumastic 70-B Enamel. When applied to a thickness of 1/32", it protects the exterior of pipe against the corrosive action of the soil. It is wasteful to specify an excess of wall thickness to compensate for corrosion. It is more economical to specify just enough wall thickness to give the pipe adequate structural strength and to use Bitumastic 70-B Enamel to prevent corrosion.

Use strong, durable steel pipe, lined and coated with Bitumastic 70-B Enamel, and give your community worth-while savings. Write for full information on protecting large-diameter water lines.

KOPPERS BITUMASTIC ENAMELS

KOPPERS COMPANY, INC., Tar Products Division, Dept. 222-T, Pittsburgh 19, Pennsylvania

DISTRICT OFFICES: BOSTON, CHICAGO, LOS ANGELES, NEW YORK, PITTSBURGH, AND WOODWARD, ALA.

Speed Meter Minimizes Traffic Accidents

Timer will start when the front wheels of the vehicle cross the first tube.

Eager to reduce the number of deaths and injuries caused by traffic accidents, many police officials are enlisting the aid of a portable road tube-operated speed measuring instrument, the Ametron Speed Meter. This compact, easily-set-up unit is manually operated and indicates the speed of vehicles in mph, directly on the meter face.

According to the Streeter-Amet Co., operation of the new meter is based on measuring the time required by a vehicle to pass between two road tubes, spaced 11 feet apart. Crossing the first tube, the front wheels of the vehicle actuate a trigger circuit, thereby starting a timer. When the front wheels hit the second tube, the timer stops and the speed is read directly on the instrument. Directional control is provided by a selector switch, permitting the measurement of speed in either direction.

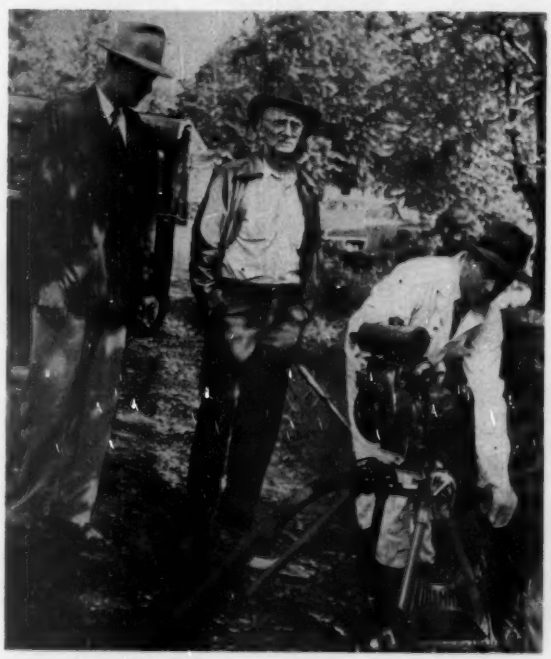
A complete description of the Ametron Speed Meter is contained in a new, illustrated brochure available from the Streeter-Amet Co., 4101 Ravenswood Ave., Chicago 13, Ill. Write directly, or use the Post Card on the colored page in this section. Circle No. 735.

Cleans Sewers and Service Lines

Sewers, laterals, and service lines have to be cleaned in the sewer maintenance program at Eastlake, Ohio. That is why Service Director William Plagemann has selected equipment versatile enough to do it all.

In this case, the equipment selected was a Kollmann sewer and drain cleaner. The unit is equipped with a sewer cable designed to go around bends in the line, as well as traps. It is powered by a reversible gasoline motor.

For full information about this sewer cleaner, write Kollmann Mfg. Co., 4818 Peach St., Erie, Pa., or you may use the Post Card located for your convenience on the colored page in this section. Circle No. 716.



Eastlake's Mayor, L. E. Bertrand, and Service Director Plagemann take an active interest in the operation of the city's new sewer cleaner.

A Handy Way to Thread Service Pipe

Many waterworks men have simplified the job of threading galvanized service pipe by using this new power-operated pipe and bolt threading machine. Lightweight, the unit is equipped with tools that will cut, ream, and thread independently, swinging out of the way when not in use.

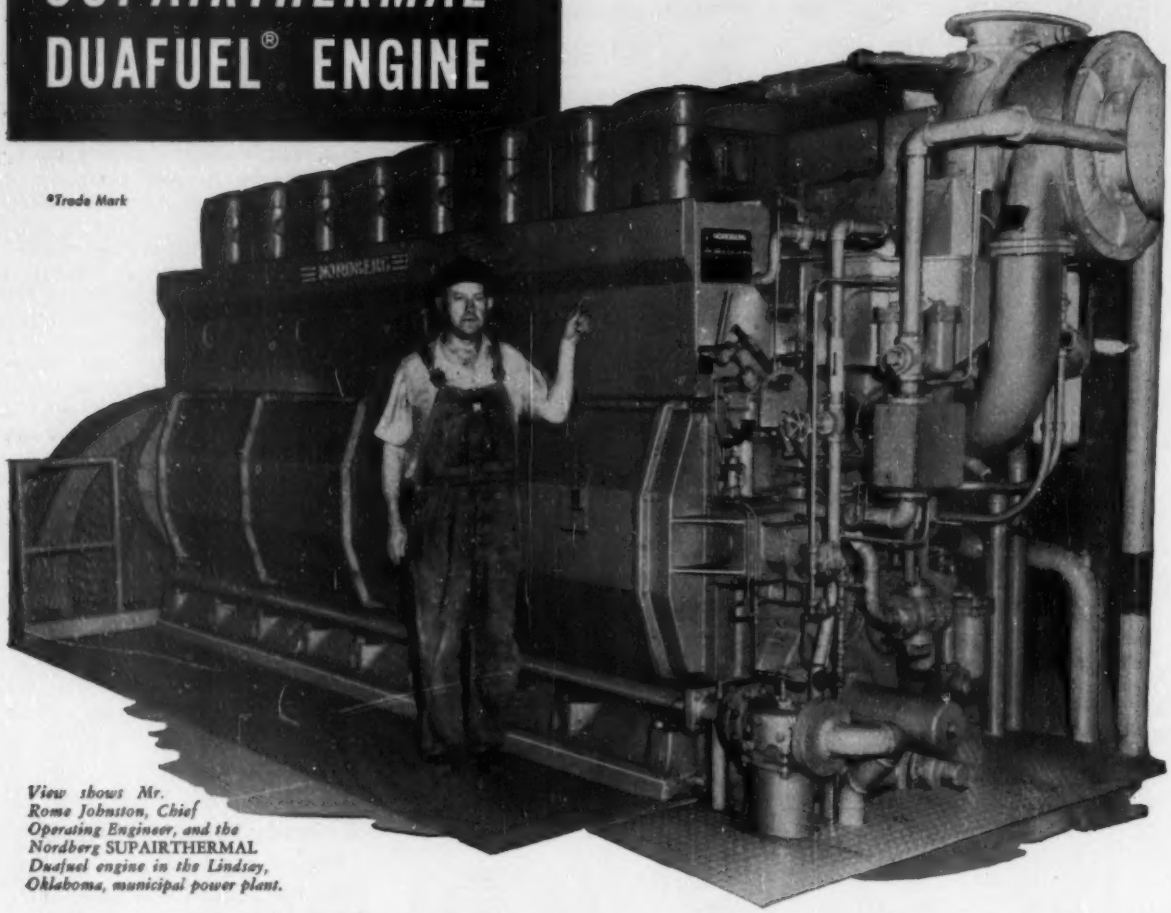
One of the highest compliments paid the Ridgid "500" Pipe Threader, came from one of the men attending the South Carolina Water and Sewage Works Conference, held in Sumter last Fall. Having mounted the tool in his repair truck using a portable electric generator for power, he discovered that it was one of the handiest pieces of maintenance equipment in the department. On rainy days, he reported, construction crews would thread pipe nipples, so that no time was wasted.

The Ridge Tool Co., Elyria, Ohio, makes the Ridgid "500" Pipe Threader. For complete details, write the company direct, or you may use the Post Card on the colored page in this section. Circle No. 713.

NORDBERG *SUPAIRTHERMAL** DUAFUEL® ENGINE

HIGH EFFICIENCY INCREASES POWER PLANT PROFITS

*Trade Mark



View shows Mr. Rome Johnston, Chief Operating Engineer, and the Nordberg SUPAIRTHERMAL *Duafuel engine in the Lindsay, Oklahoma, municipal power plant.*

AT the Lindsay, Oklahoma, municipal plant, a Nordberg *SUPAIRTHERMAL* Duafuel engine is generating energy at an average fuel cost of 2.5 mills per kwh at 58.5 percent average load factor. This Nordberg four-cycle, 8-cylinder engine is rated 1425 horsepower, 1000 kilowatts, at 450 rpm.

Since this 13" x 16½" *SUPAIRTHERMAL* engine was placed in service, it has been operating over 98 percent of the time. Data compiled by C. H. Guernsey & Co., consulting engineers, show savings in fuel costs of over $1200 per month as against straight oil operation. In addition, this engine has maintained a lubricating oil economy of approximately 18,000 HP/hrs. per gallon.

Because of its compact design, the 1425 hp Nordberg *SUPAIRTHERMAL* engine was installed in the very limited floor space formerly occupied by a 200 HP unit, eliminating the necessity for costly building expansion.

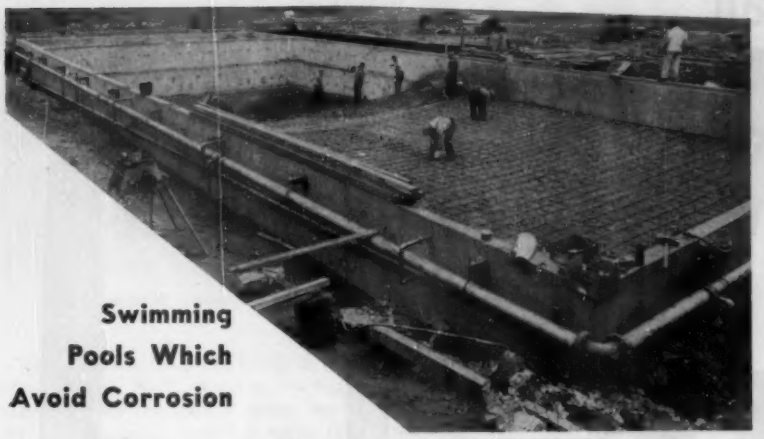
When *you* need more economical, compact power, investigate the tested and proved advantages of Nordberg *SUPAIRTHERMAL* engines, in sizes from 535 to 4260 HP. *For details, write for Bulletin 191.*

NORDBERG MFG. CO., Milwaukee, Wisconsin

NORDBERG

DIESEL • DUAFUEL® AND SPARK-FIRED GAS ENGINES

P853



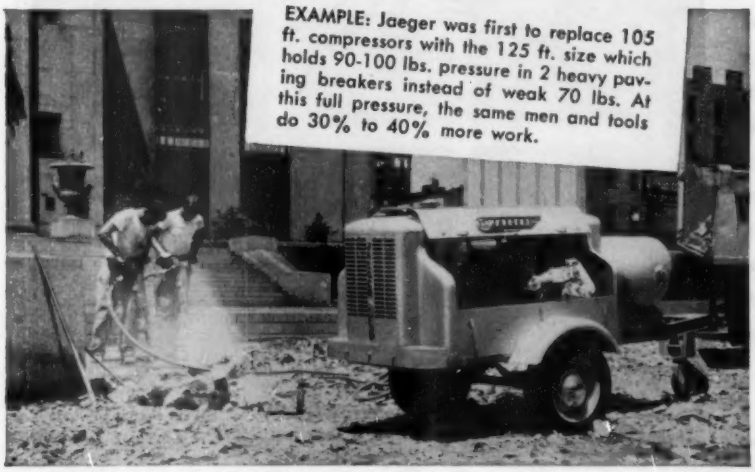
Swimming Pools Which Avoid Corrosion

The efforts of many municipal officials to provide improved recreational facilities in the wake of relaxed Federal controls are exemplified by this new swimming pool construction in the City of Wheeling, W. Va.

The Warwood Pool, like three other similarly designed outdoor pools being built in Wheeling, is using wrought iron pipe to protect filter water and drag lines against corrosion. This same material is being used in the soil and waste lines of the new bathhouses serving the pools.

For detailed literature discussing corrosion-resistant wrought iron pipe, write the A. M. Byers Co., 1810 Clark Bldg., Pittsburgh, Pa., or you may use the Post Card located on the colored page in this section. Circle No. 710.

Jaeger "air plus" puts full wallop into any set of tools


EXAMPLE: Jaeger was first to replace 105 ft. compressors with the 125 ft. size which holds 90-100 lbs. pressure in 2 heavy paving breakers instead of weak 70 lbs. At this full pressure, the same men and tools do 30% to 40% more work.

75 ft.
125 ft.
185 ft.
250 ft.
365 ft.
600 ft.

Comparable increases in production are obtained with all 6 Jaeger "new standard" ratings. Their performance has been proved-in-use by thousands of units in the field. First cost and operating cost, per cu. ft. of 100 lb. air, is far below any "old standard" size machine.

See your Jaeger distributor or write for Catalog JC-1.

THE JAEGER MACHINE COMPANY 505 Dublin Avenue Columbus 16, Ohio

LOADERS • PUMPS • MIXERS • TRUCK MIXERS • PAVING MACHINES

engrave your own signs

MARKERS
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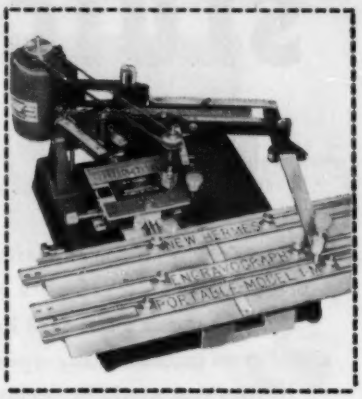

Portable machine, size of typewriter, operated by unskilled worker.

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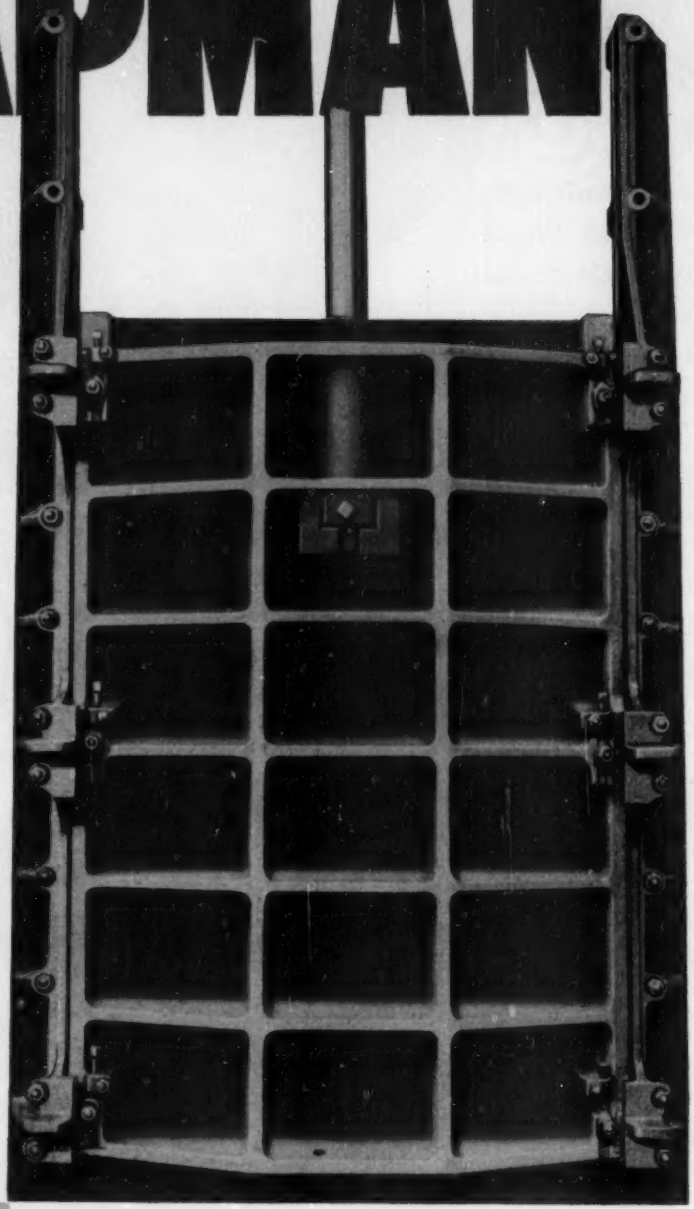
You "GIVE THE GATE" to Excessive Costs

...when you install

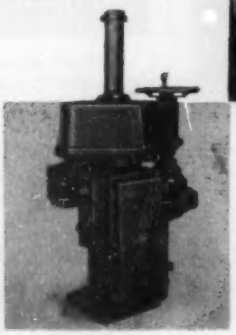
CHAPMAN

Standard SLUICE GATES



Here's why Chapman means top protection against excessive costs: First, Chapman's standard line of sluice gates includes many types and sizes that would be specials in anyone else's catalog. Next, installation is quick and easy because stems and couplings don't have to be match-marked. And any servicing or repairs can be done on the job, at minimum expense.

These 3 important savings tell you why Chapman Standard Sluice Gates rate first with well-managed waterworks, sewage works and flood control projects all over the country. Write for Catalog today.



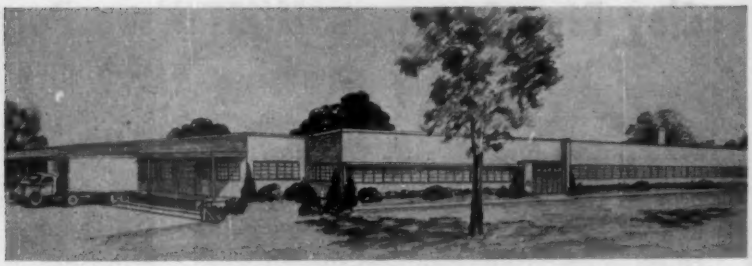
. . . and here's still another saving: Chapman's Motor Unit comes to you complete . . . all you have to do is bring the power leads into the connection box . . . and there's your operating control, all ready to go to work.

The Chapman Valve Manufacturing Company

INDIAN ORCHARD, MASSACHUSETTS

Purchasing News

Permutit Expands Manufacturing Facilities



The Permutit Company's new metal-working plant at Lancaster, Pa.

The Permutit Co., 330 W. 42nd St., New York 36, N. Y., manufacturers of industrial and commercial water conditioning equipment and ion exchange resins, is building a modern metal-working plant at Lancaster, Pa., according to company president H. W. Foulds. With the foundations in and most of the steel-work installed, it is scheduled for completion sometime this Spring, after Permutit has vacated its Brooklyn, N. Y. plant.

The new plant, costing some $750,000, will occupy two acres on a site of approximately 30 acres. It will enable the firm to provide better customer service, as well as a more suitable working space that can be expanded when required.

Later this year, reports Mr. Foulds, the manufacture of Simplex Valve & Meter Co. products, now produced in Philadelphia, Pa., will also be transferred to Lancaster. The company's main executive and sales office in New York, and its manufacturing plant at Birmingham, N. J., will not be affected by the move.

Used Addressograph for Sale

1—Model 3700 Addressograph, Serial 409418—uses roll post card stock 10 9/16" wide—cuts stock to size—prints front and back and addresses utility bills—uses Style M addressograph plates—out of service approximately 6 months.

32—Y & E Card File Cabinets 14 trays each cabinet—holds approximately 200 cards 4" x 6" per tray.

Offered "as is where is."

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Purchasing Agent
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New! PORTABLE POWER

MODEL 45 MOW4
5 K.W.
KATOLIGHT
POWER PLANTS
Wheel Mounted
for use anywhere!

Whatever your Municipal Department's needs, you'll find a KATOLIGHT Generating Unit. Continuous or Standby Plant, available. Choice of air or water cooled, well known make gasoline engines. Up to 42 KVA. Also Meter Generators Sets, High Frequency Generators, Converters, Frequency Changers and Independent Generators up to 300 KW.

Write Regarding Your Requirements Today!

KATOLIGHT CORPORATION
Box 491-25 Mankato, Minnesota

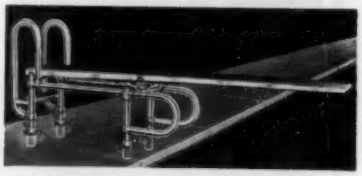
You'll like DOING BUSINESS WITH AMERICAN

Since 1911 the finest Park, Playground and Swimming Pool Equipment built, unsurpassed in strength, durability and safety, and backed by *lifetime guarantee* against defective materials and construction . . . low, nationally advertised prices which today average but little above pre-war 1941 . . . highly personalized service on both your problems and orders . . . prompt, friendly adjustments to your complete satisfaction . . . these are just a few of many reasons we believe you'll enjoy doing business with AMERICAN.

American Streamlined Extra Heavy Duty Park Bench

All-American Picnic Grill Portable or Stationary

An American DeLuxe Combination Unit



Official Regulation One-Meter Unit

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AMERICAN
PLAYGROUND DEVICE CO.
ANDERSON, INDIANA U.S.A.
WORLD'S LARGEST MANUFACTURERS OF FINE PLAYGROUND & SWIMMING POOL EQUIPMENT

THERE'S NO SAFE SUBSTITUTE . . .

Clay Pipe Sewerage MUST Keep Pace With Every Growing City!

Public officials in the Greater Minneapolis area know how important safe sanitation is to fast-growing new residential areas. This one project alone—the Ardmore addition to the city's southwest borders—calls for 7,892 feet of Clay Pipe. Another $4,000,000 project in the suburb of Richfield will require an estimated 100 miles of Clay Pipe. The Richfield project will be handled by the G. M. Orr Co., consulting engineers, under the supervision of Robert Huston, design engineer.

Throughout the nation, Vitrified Clay Pipe is solving vital sewerage problems of areas confronted with "growing pains." Here are just a few of the reasons for this overwhelming preference for Clay Pipe:

PUBLIC OFFICIALS know that Clay Pipe is guaranteed for 50 years. It's a guarantee of safety and performance that is especially important when sewerage and drainage facilities are financed by bond issues.

ENGINEERS are assured their professional reputations will be enhanced by years of trouble-free service, because Clay Pipe can't be corroded by acid waste or sewer gases.

CONTRACTORS know they can count on Clay Pipe for fast, easy installation and ready availability.

The manufacturers of Vitrified Clay Pipe work constantly to make this fine product even better through research and testing. You can be sure you're getting the latest and the best when you specify Vitrified Clay Pipe. It's performance-proved . . . precision-produced . . . and permanently safe!

Vitrified CLAY PIPE

CLAY DIGS NEVER WEARS OUT!

NATIONAL CLAY PIPE MANUFACTURERS, INC.

1520 18th St. N. W., Washington 6, D. C.

311 High Long Bldg., 5 E. Long St., Columbus 15, Ohio
703 Ninth & Hill Bldg., Los Angeles 15, Calif.
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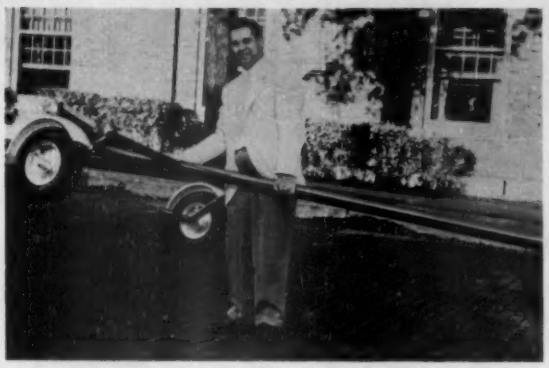
206 Connally Bldg., Atlanta 3, Ga.

C-254-1

Transporting Emergency Boats



Robert F. Meyer, president of the Luther Corp., has no trouble handling the 100-pound Model B-700 Sport Trailer.

Fire and police departments, volunteer rescue squads, and others who use aquatic vehicles to handle water emergencies, should appreciate the new lightweight boat trailer recently introduced by the Luther Corp., Williams Bay, Wis. Using this trailer, boats can be transported, without damage, at the fastest possible speeds.

Three models are offered: the 100-pound Model B-700 which accommodates boats up to 14 feet in length; Model E-1100, designed for boats and equipment weighing up to 1,100 pounds; and Model C-2000, for light inboards up to 18 feet.

Another Luther introduction is the Boatrailer Lite, a new type taillight that may be clipped on to the transom of the boat. This light is easily removed when the trailer is backed into the water.

For additional data, address the manufacturer direct, or you may use the Post Card on the colored page in this section. Circle No. 721.

Exclusive! "GLIDER"

BURKE
PLAYGROUND EQUIPMENT

Complete line of playground, home, playschool play devices.

BURKE EXCLUSIVES
★ HOBBY-HORSE
★ GLIDER
★ CLIMB-A-ROUND

Write for special literature catalog, price list, booklet "Planning Your Playground" or specifications.

THE J. E. BURKE PLAYGROUND EQUIPMENT CO.
Factories at
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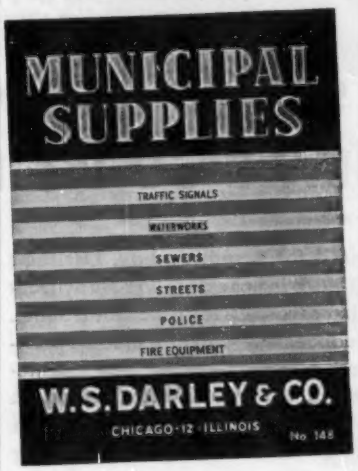
BOX 986, NEW BRUNSWICK, N. J.

NEW CATALOG!



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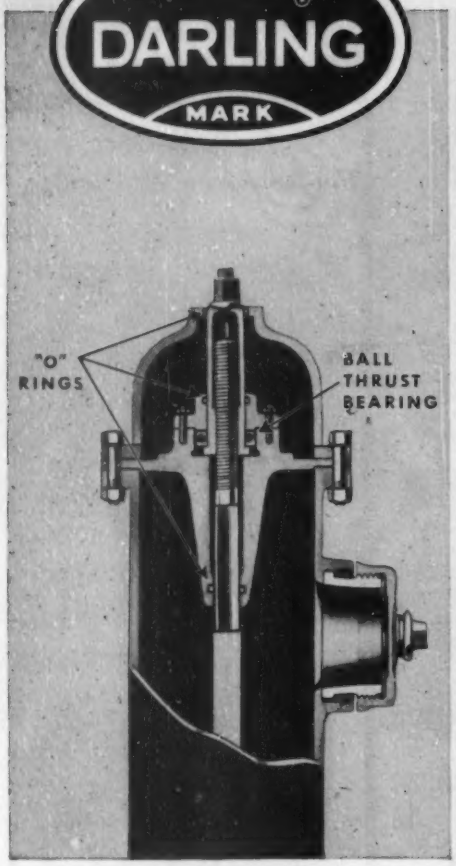


A. W. Grathwol, manager of the Sandusky, Ohio, Water Distribution Department, checking static water pressure on a newly installed Darling B-50-B hydrant.

Word is getting around about DARLING'S NEW B-50-B FIRE HYDRANT

WATER distribution men like A. W. Grathwol of the Sandusky, Ohio, Water Distribution Department, are spreading the good news about the new patented Darling B-50-B fire hydrant. It rates as the most important fire hydrant advance in 50 years.

Here are reasons why . . .

1. The "O" ring seals eliminate need for a stuffing box. Darling's B-50-B is a packless, *dry-top* hydrant that saves service time and trouble. It does away with bothersome packing gland adjustment and maintenance, assures constant lubrication of the operating threads *and prevents water from reaching the operating threads.*

2. The Darling B-50-B is a *ball-bearing* operated hydrant. Opening and closing takes less than half the usual wrench torque.

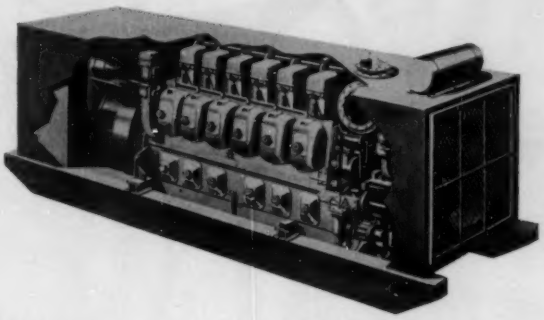
And you also get another long-time advantage of Darling hydrants . . . all inside working parts, including the main valve seat and drain valve seats, can be removed through the top *by one man* for on-the-spot inspection and maintenance. Write for Bulletin No. 5007 before you decide on any hydrant. Address . . .

DARLING VALVE & MANUFACTURING CO.

Williamsport 10, Pa.

Manufactured in Canada by The Canada Valve & Hydrant Co., Ltd., Brantford 7, Ontario

Announces New Portable Electric Generator



An asset to every size community, portable electric generators provide dependable emergency power during fire, flood and other disasters. They can be used for standby service to handle peak traffic loads, and are easily installed on construction projects requiring considerable temporary light and power.

A really dependable unit is this compact, portable diesel-electric generator for emergency, temporary or standby service recently announced by the American Locomotive Co., Schenectady 5, N. Y. These generators can be equipped with 9- x 10½-in., 4-cycle, turbocharged Alco diesels in sizes ranging from 390- to 1,300 kw, and feature all auxiliary equipment including the generator, exciter and switch gear, mounted on rigid skids so that by simply connecting the power cables, the unit is ready for operation.

A vertical-type radiator provides jacket water cooling with an ambient air temperature of 100°F. The fan is driven by Vee belts with the driving sheave mounted on an extension of the crankshaft. Thermostatic control of the radiator shutters is furnished to maintain the required jacket water temperature, and an expansion tank mounted above the radiator provides cooling water capacity.

Alternating or direct-current generators may be provided with standard voltages. The design of these portable units can also be adapted to pipeline service, flood control and irrigation, by substituting step-up gears and pumps for electric generating equipment.

Additional information on the new portable diesel-electric generator is available from the manufacturer, or you may use the Post Card on the colored page in this section. Circle No. 734.

New Location for Blackburn-Smith

Main offices of The Blackburn-Smith Mfg. Co. Inc., have been moved from the Seaboard Trust Bldg., in Hoboken, N. J., to 150 Observer Highway, Hoboken. This company manufactures a pneumatic sewage ejector system.

Pitometer Associates

The Pitometer Co., Inc., has changed its name to The Pitometer Associates, Inc., according to a recent announcement. The firm will continue operating with the same personnel at 50 Church St., New York, N. Y.

REALOCK FENCE

keeps your guard up

With a Realock Fence enclosing your buildings and grounds, your guard is always up against the risks of unauthorized entry. Realock Fence means ever-present protection... saves you money by eliminating need for extra watchmen ...protects against potential loss from burglary and vandalism.

Consult your classified telephone directory for nearest sales office or write to any of our three division offices for free estimate or catalog.

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THE COLORADO FUEL AND IRON CORPORATION
Denver and Oakland
WICKWIRE SPENCER STEEL DIVISION
Buffalo, New York

2053

REALOCK FENCE
THE COLORADO FUEL AND IRON CORPORATION
CF&I

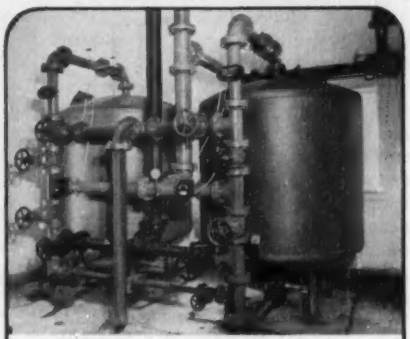
How Martinsville gets iron-free, soft water

Martinsville, Illinois Municipal Water Plant. Constructed in 1950.

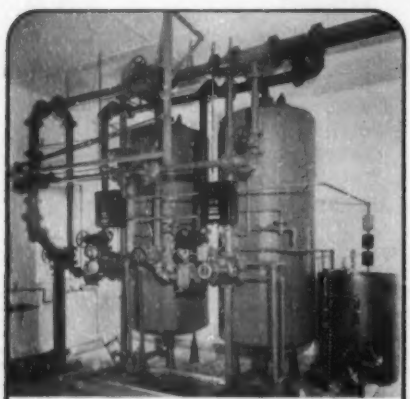
MARTINSVILLE'S untreated well water was very hard . . . an extremely wasteful nuisance!

Its 269 ppm of total hardness ruinously scaled pipes and water heaters. And further annoyed citizens by wasting soap, leaving unsightly rings around bathtubs, sticky curd on dishes and laundry. Iron of 2 ppm—which gave the water an unpleasant metallic taste—caused objectionable stains on plumbing fixtures and laundered fabrics.

These troubles were ended when Martinsville installed the Permutit equipment shown. On a recent check, we asked for the operator's opinion of our equipment.



Compact Permutit pressure filters have a 150 gpm capacity...remove iron oxidized in coke-tray aerator, reduce turbidity.



Permutit softeners remove hardness, further reduce iron to 0.02 ppm! Automatic regeneration saves time . . . provides constant supply of softened water.

Mr. O. Wiser—who is in charge of the Martinsville Municipal Water Plant—reports: "The Permutit equipment is very good . . . has worked very well with very little maintenance."

Free Technical Bulletins

Write today for full information on any water conditioning process or problem. THE PERMUTIT COMPANY, Dept. AC-2, 330 West 42nd Street, New York 36, N. Y.

PERMUTIT®

WATER CONDITIONING HEADQUARTERS FOR OVER 40 YEARS

Purchasing

Lightweight Fire Hose Has Greater Strength

Greater compactness and lighter weight of the new hose is demonstrated with 50-ft. coils by Donald O. Johnston, hose development manager of Boston Woven Hose & Rubber Co.

In 1880, the Boston Woven Hose and Rubber Co. first introduced woven fire hose, long a standard in fire departments throughout the nation. Recently, this same company announced a new type fire hose; one that is reported both lighter and stronger than any in present use.

According to James N. Mason, company director of research and development, the new hose gains its lightweight and strength from the utilization of glass fiber yarn. This specially treated fiber won't absorb water. As a result, the wet hose is lighter and remains more flexible at low temperatures. It is also compact. Where a 50-ft. length of conventional cotton hose would form a coil some 28 inches in diameter, the same length of Boston Glass Fiber Hose forms a coil of about 24 inches in diameter.

In company-directed tests, reports Mr. Mason, heavy trucks were driven over the hose while under full pressure. The hose, he says, remained undamaged. Its extra strength can withstand the impact of ten tons and more. This same strength results in a thinner wall on hose of conventional outside diameter, thus permitting a larger bore which will handle additional gallons of water per minute.

Production of the new hose is limited at present, announces the company, "but plans are under way for increased capacity to meet the need for lighter weight, longer wearing fire hose."

For additional data, address Boston Woven Hose and Rubber Co., P. O. 1071, Boston 3, Mass., or you may use the Post Card, located for your convenience on the colored page in this section. Circle No. 705.

Destroy flies, mosquitoes, and other pests with *IRON AGE* Mist Sprayers

For a healthier community . . . for a more comfortable community . . . Iron Age Mist Sprayers are a *must* for community insect control! Parks, playgrounds, golf courses, swamp areas are completely protected *for long periods of time* because Iron Age Mist Sprayers have a lasting kill.

Iron Age Model 125 EAP (shown above) delivers up to 11,000 cubic feet of air per minute at 90 to 125 miles per hour. Axial flow fan operates at 87% efficiency. Pump has drive gears completely enclosed . . . handles all solutions that dissolve or emulsify. Special pump (available as optional equipment) handles solutions remaining in suspension. Find out how Iron Age Mist Sprayers can make your pest control program far more effective at less cost. Mail coupon below for details—no obligation.

Iron Age Mist Sprayers give you these advantages:

- Greater community health and comfort
- Superior control of flies and mosquitoes
- Efficient use of power, material, equipment
- Choice of pumps for different solutions

OLIVER
IRON AGE
Finest in Farm Machinery

MAIL TODAY FOR FREE INFORMATION

THE OLIVER CORPORATION, Dept. 36, 400 W. Madison St., Chicago 6, Ill.

Gentlemen:

☐ Please send me information on Iron Age Mist Sprayers

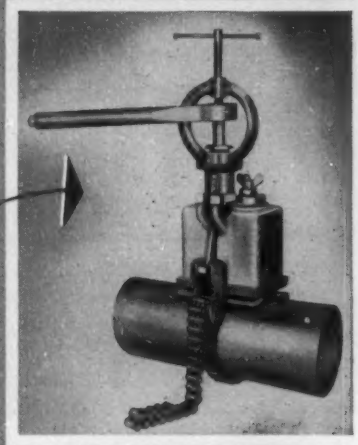
Name.....

Title.....

Address.....

City..... Zone..... State.....

It's new... and better!



the **WELSBACH** *Kitson*

CORPORATION TAPPING MACHINE

For installing corporation stops under pressure, this is the safest, surest, most easily-handled and, without sacrifice of inherent strength, the lightest corporation tapping machine ever made. It is so compact that it is ideal for making taps where space is limited.

It is the new Welsbach-*Kitson* Corporation Tapping Machine—an improved model of the popular Smith-Shelly Tapping Machine, equipped now with a flat chain and adaptor that provides positive non-slip pipe-gripping action . . . which makes it an even better machine than before. And in keeping with the simplicity of operation of this popular machine, the new adaptor, which gives *positive* pipe-gripping action, is easy to set and helps speed the operation.

with the new
POSITIVE, NON-SLIP PIPE-GRIPPING ACTION!

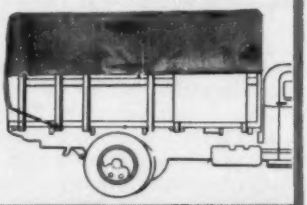
THE WELSBACH CORPORATION
Kitson Valve Division
1500 Walnut Street, Philadelphia 2, Pa.

PROTECTION ✓
EFFICIENCY ✓
for your
CITY

Shuredry
SALVAGE COVERS ***for your Fire Department***

Cut water and smoke damage with SHUREDRY Green-Bak Salvage Covers — they're pressure impregnated by an exclusive Fulton dry-treatment process. All seams are waterproof. SHUREDRY Covers are light, pliable and easy to handle. Specify SHUREDRY — your Fire Equipment Dealer has them.

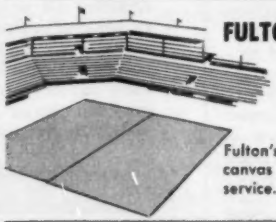
FULTON COVERS ***for your Sanitation Trucks***



Fulton makes a complete line of top quality Tarpaulins and Truck covers in any size you need.

Fulco
CONCRETE CURING MATS ***for your Road Department***

Fulco Mats produce a more uniform paving job, minimize the possibility of cracks and do in 72 hours what took about 10 days under the wet-burlap-wet-earth method. Fulco Mats can be used 50 to 75 times. They're economical.



FULTON COVERS AND TARPS ***for your Softball Baseball and Football Fields***

Fulton's special treatment of the heavy canvas duck, assures long, economical service.

Write your nearest Fulton branch for information and prices.

Fulton
BAG & COTTON MILLS

ATLANTA • SAVANNAH • NEW ORLEANS • DALLAS • ST. LOUIS
DENVER • LOS ANGELES • KANSAS CITY, KANS. • MINNEAPOLIS
NEW YORK CITY • WINTER HAVEN, FLA. • SAN FRANCISCO
PHOENIX

A Better Rodenticide

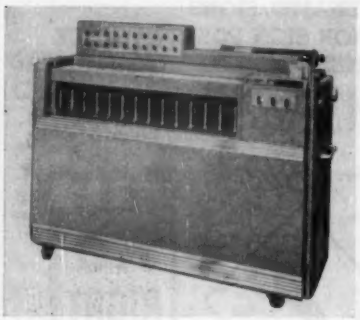
A good cereal-type rodenticide that isn't subject to damage by insects or molds is offered by Motomco, Inc., and should provide really effective rodent control.

This company's Pival, applied in a concentration of 0.025% in such cereal baits as ground corn or oatmeal, has successfully completed tests conducted by the Wildlife Research Laboratory of the U. S. Department of Interior. These tests show that Pival will effectively control infestations of Norway rats, roof rats and house mice, and is less subject to infestation from insects or to contamination by molds. Moreover, the new rodenticide represents minimum risk to humans or larger animals.

The Louisiana State Department of Health, Typhus Control Branch, also conducted extensive field tests of the Pival feed bait, and found it effective in three town-wide rodent campaigns. One, in Kaplan, La., showed that Pival worked as well or better than other rodenticides, presented no hazards to fowls or animals, and was free from the weevil larva that troubled other baits. Campaigns were also conducted successfully in Parks, and St. Martinville, La.

For detailed literature about Pival Concentrate, write Motomco, Inc., 10 Murray St., New York 7, N. Y., or you may use the Post Card on the colored page in this section. Circle No. 708.

Rapid Search of Fingerprint Records

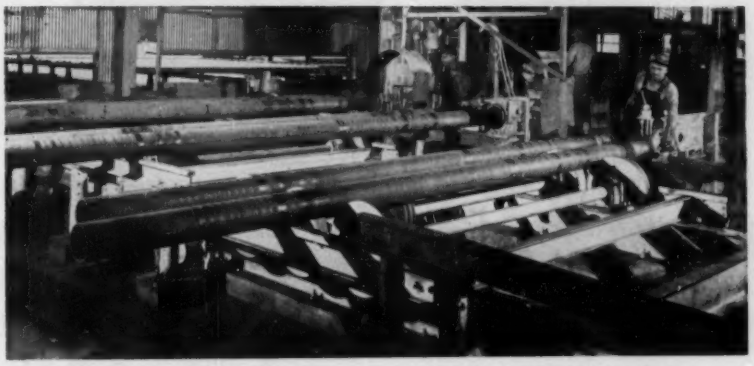


Locating fingerprint patterns in a fraction of the time required by manual methods is possible with the IBM Electronic Statistical Machine with fingerprint dial selector, developed in cooperation with William E. Cashin, Director of the New York State Div. of Criminal Identification.

It consists of a set of 20 dials arranged in two horizontal rows. Each vertical pair of dials represents a single finger, and the machine operator dials the pattern, finger by finger, for the fingerprint desired.

The machine automatically searches a file of punched cards at the rate of 450 a minute, dropping out of the file any fingerprint card corresponding closely with the dial settings. Identifications are based on an automatic comparison of all ten fingers as recorded in the punched cards with the pattern dialed. The machine automatically makes allowance in the search for unknown fingers or amputations.

For complete information, address International Business Machines Corp., 590 Madison Ave., New York 22, N. Y., or use the Post Card on the colored page in this section. Circle No. 707.



Centrifugal cement-lining machine in operation at a McWane-Pacific pipe plant.

McWANE-PACIFIC

Cement-Lined CAST IRON PIPE

MAINTAINS FLOW

McWane-Pacific Super-DeLavaud Cast Iron Pipe and Pipe Fittings are furnished with either standard thickness of cement lining or thin cement lining with seal coat, when so specified. The cement lining is applied centrifugally in standard Super-DeLavaud cast iron pipe, either open bell-and-spigot, or Precalked Mechanical Joint.

For those sections of the country where soft water may cause interior tuberculation, cement lining protects the pipe from tuberculation and maintains a high coefficient of flow over a long period of time.

McWane-Pacific cement linings adhere strongly to the interior wall of the pipe. The pipe may be cut and tapped without damage to the cement lining. For complete information, write or telephone—

McWANE Cast Iron Pipe Company
Birmingham, Ala.
Pipe Sizes 2" thru 12"

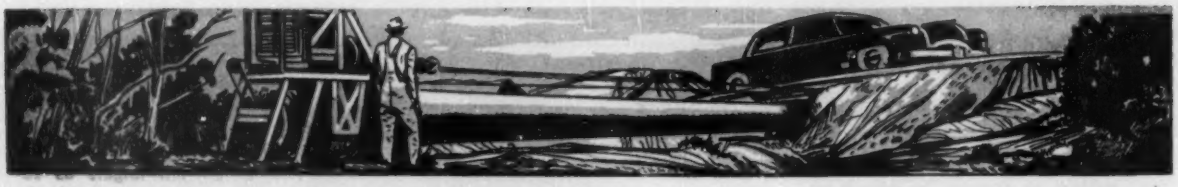
Sales Offices

Birmingham 2, Ala. .....P. O. Box 2601
Chicago 1, Ill. ....333 North Michigan Ave.
New York 4, N. Y. .....80 Broad Street
Kansas City 6, Mo. .....1006 Grand Avenue
Dallas 4, Texas.....3200 Maple Avenue

PACIFIC STATES Cast Iron Pipe Co.
Provo, Utah
Pipe Sizes 2" thru 24"

Sales Offices

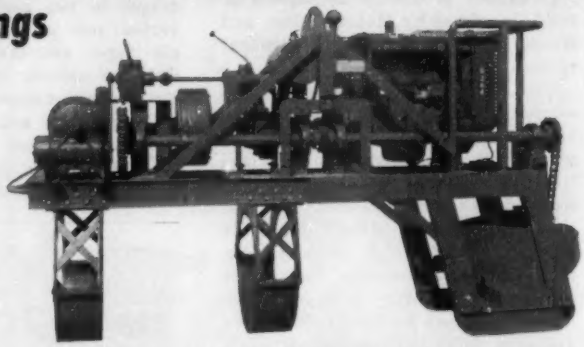
Provo, Utah.....P. O. Box 18
Denver 2, Colo. .....1721 Blake Street
Los Angeles 48, Cal. .....6399 Wilshire Blvd.
San Francisco 4, Cal.....235 Montgomery St.
Portland 4, Ore.....501 Portland Trust Bldg.
Salt Lake City.....Waterworks Equip't Co.
Seattle 4, Wash. .....Smith-Tower Bldg.



Now you can bore road crossings without stopping traffic with

CROSE *Auger-Type* ROAD BORING MACHINE

Here's the fastest and most economical method of boring road crossings where rock is not encountered. No need to stop highway or rail traffic. Casing is installed as boring progresses—eliminates cave-ins. Absolutely prevents settling of concrete slab highways or railroad beds. Extremely accurate in alignment. Adaptable to all sizes of casing from 3" to 34". Send for illustrated folder.



- FOR PIPELINES • ELECTRICAL CONDUIT
- SEWERS • WATER LINES • CAST IRON PIPE

m.j. Crose MANUFACTURING COMPANY, INC.
2715 DAWSON ROAD • PHONE 6-2172 • TULSA, OKLAHOMA
Branch Offices in:
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Save time and get quick efficient service on pipeline equipment.

PHONE 6-2172 TULSA

NO "CRYSTAL BALL" NEEDED

Detectron "505" PIPE DETECTOR

takes all guesswork out of Pipe Detection

- DETECTS, TRACES and CENTERS PIPE, CABLE, ETC.
- ESTIMATES EXACT DEPTH
- SEPARATES PARALLEL PIPE, CABLE and CONDUIT

A crystal ball might be one way to locate buried pipe or cable at an excavation site. But . . . a *better, safer* and *more efficient* way is to use the new, improved Detectron "505" that accurately pinpoints the exact length, depth and location. *Stop guessing —and be sure!*

Send today for FREE Catalog No. 54

THE *Detectron* CORPORATION
5420 VINELAND AVE., NO. HOLLYWOOD, CALIF.

Nite-Bright HIGHWAY SIGNS

"BRIGHT BY DAY— BRILLIANT BY NIGHT"

FOR THE BEST IN TRAFFIC SIGNS (heavy type)
ALUMINUM SIGNS REFLECTORIZED WITH SCOTCHLITE • EMBOSSED STEEL BAKED ENAMEL SIGNS
CHANNEL IRON SIGN POSTS IN STOCK
TRAFFIC CONES—IMMEDIATE SHIPMENT

See Our Listing in the 1953 Edition of The Municipal Index

Write Us for Complete Information

NITE-BRIGHT SIGN COMPANY
140 JAMES STREET, BRIDGEPORT 4, CONN.

Easy Way to Locate Buried Water Valves

Locating a buried water shut-off valve is no trouble with this new Goldak detecting device.

Here Mrs. Gerald McKay and Louis LeBar, water commissioner of Livonia, Mich., use the unit to look for a shut-off valve under the McKay lawn at 15232 Melrose St. The device resembles an army mine locator and will locate valves to a depth of two feet or more. When the instrument is directly over a metal object, a buzzing

sound will be produced in the earphones worn by Mrs. McKay.

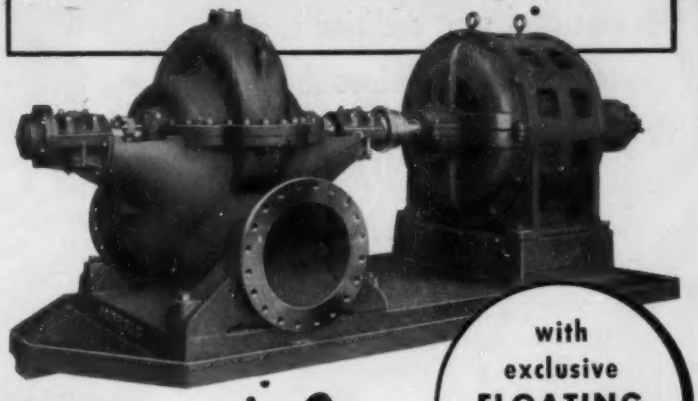
The detecting unit is made by the Goldak Co., 1544 W. Glenoaks Blvd., Glendale 1, Calif. For further information, write the company direct, or take advantage of the Post Card located on the colored page in this section. Circle No. 729.

Screening Device Corrects Cannery Waste Problems

Excessively strong cannery wastes needn't be a problem to complicate municipal sewage treatment. Persuade your canneries to remove the polluting solids at the source with Sweco vibrating screens. A cannery in Griffin, Ga., uses two of these separators to remove solids being discharged from the plant in a waste, flowing at the rate of 900 gpm.

For full information, address the Separator Div., Southwestern Engineering Co., 4800 Santa Fe Ave., Los Angeles 58, Calif., or take advantage of the Post Card located on the colored page in this section. Circle No. 709.

Minimum Leakage provides Maximum Efficiency



with exclusive FLOATING SEALING RINGS

Morris

Horizontally-Split Double-Suction

WATER PUMP

In a centrifugal pump the running joint between the impeller and the pump casing is a highly critical point. Since it operates under suction vacuum on one side and discharge pressure on the other, excessive leakage will adversely affect efficiency.

Morris' exclusive *Floating Sealing Rings* reduce this hazard. As the pump comes up to speed, the Floating Sealing Rings adjust themselves to a concentric close-running clearance around the impeller. When full speed is reached, internal hydraulic pressure forces the rings tightly against the precision-machined faces of the casing rings where they are held firmly in place. Leakage is kept at a minimum—initial efficiency is maintained for extremely long periods of service.

Built to Last Longer

There's no scrimping of materials in the construction of this pump. All parts are extra-heavy—intentionally—to withstand many more years of severe operating conditions.

Morris Horizontally-Split Double-Suction Pumps are built in sizes ranging from 2" to 20", and may be connected in series on a single bedplate for heads exceeding those which can be developed by a single pump. For further information, contact the Morris office nearest you or write for free Bulletin 179.

MORRIS MACHINE WORKS

Baldwinsville, N. Y.

Sales Offices in Principal Cities

MORRIS Centrifugal Pumps

ANNOUNCING

THE RECORDAK SUPERMATIC MICROFILMER

Sensational new addition to the Recordak line combines these 7 time-saving, dollar-saving features

1 **Fronts and backs of documents are recorded simultaneously at 40-1 reduction,** which is the highest ratio available today. This enables you to put over 29,000 check-size images on a 100-ft. roll of 16mm. Recordak Microfilm. All documents up to 11 inches wide can be photographed with maximum film economy.

2 **New, high-precision automatic feeder handles over 500 checks per minute . . .** over 200 letter-size documents. *As accurate as it is fast,* this built-in feeder has a separating device that all but ends possibility of documents overlapping. An electric counter shows you the exact number of pictures taken.

3 **Gives you 3 methods of recording to match varying requirements**

(1) Duplex—the fronts and backs of documents are recorded simultaneously side by side on the film.

(2) Duo—the fronts of documents are recorded down one side of the film, then up the other.

(3) Standard—the fronts of documents are recorded across the full film width.

4 **Exposes 2 rolls of 16mm. film simultaneously**—you'll find this a wonderful convenience and saving when extra film copies are desired for vault storage, branch offices, other departments, etc.

5 **Choice of 5 reduction ratios**—ranging from 40-1 (for maximum film economy) to 18-1 (for largest pictures). This increases your scope still further . . . and you can change from one reduction to another by simply interchanging the lens kits in the built-in film unit.

6 **Uses 35mm. film as well as 16mm. film . . .** an advantage that will be especially appreciated when large side-by-side pictures are desired of the fronts and backs of accounting forms, statistical records, and other material containing numerous closely spaced entries.

7 **Greater convenience for your operator** She can concentrate on large volume production—all controls are at her finger tips . . . easily reached from a sitting position. Documents are returned in correct sequence to a receiving tray above desk level. There is ample space for assembling documents prior to microfilming . . . plenty of leg room, too.

The Recordak Supermatic Microfilmer boasts attractive, all-metal design . . . is approximately 4 ft. high . . . requires less than 12 sq. ft. of floor space.

* * *

Write today for full details on the Recordak Supermatic Microfilmer. Recordak Corporation (Subsidiary of Eastman Kodak Company), 444 Madison Avenue, New York 22, N. Y.

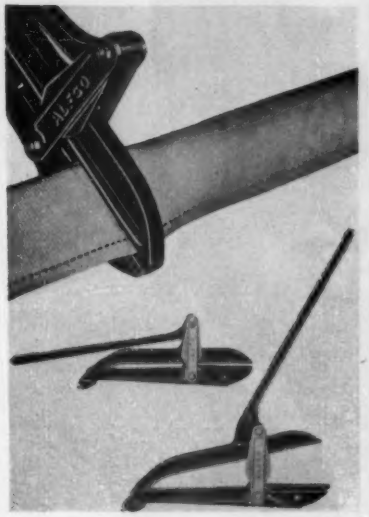
"Recordak" is a trade-mark

RECORDAK

(Subsidiary of Eastman Kodak Company)

originator of modern microfilming—and its application to government routines

Quick Way to Shut-Off Fire Hose



Use this Alfco Hose Shut-Off device on 1½-, 2½-, and 3-in. double-jacket fire hose, switching it quickly and without adjustment from one hose line to another. Use it to shut off a hose line, to take out and replace broken lengths of hose, and to add hose to a charged line. It may also be employed in changing a nozzle, connecting a cellar nozzle or standpipe, or draining a hose line for carrying up a ladder.

A downward pressure on the operating lever locks the Alfco device securely in place. It takes less effort to shut off a charged line as the body weight can be utilized in the downward thrust.

The new hose shut-off is 27½ inches long, weighs 16 pounds, and is manufactured by the American-LaFrance-Foamite Corp., Elmira, N. Y. For further data, address the company direct, or you may use the Post Card on the colored page in this section. Circle No. 706.

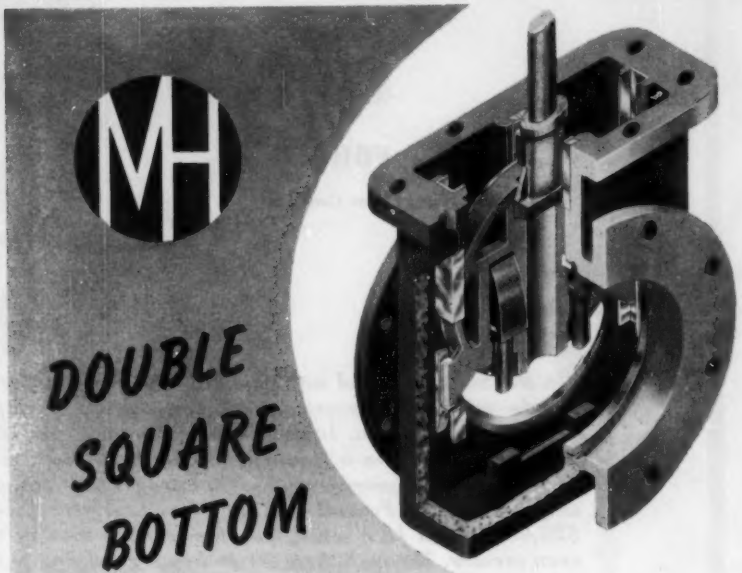
Trailer Power Unit That Pumps and Lights the Job

A new portable power plant is notable for its compactness and certain special features. Trailer-mounted for one-man handling, the unit weighs 1,180 pounds, only 100 pounds of which is on the towing end for lifting.

The unit consists of a 1,500-watt Kohler electric plant, a 2,500 gph pump, and a 6-volt independent battery circuit. The pump is for pumping water from manholes. By means of a 3-point switch on a remote-control cable that is lowered into the manhole, the worker can start the pump and also summon a helper by a buzzer button on the switch. The unit carries 15-ft. lengths of suction hose and discharge hose. All the remote-control voltage in the manhole is 6-volt.

A 300-watt lamp with 20-in. shade is mounted on a telescopic mast that can rise 8 feet above the ground. This lights the working area. On top of the lamp shade is a 6-volt red blinker to warn that men are working here.

Mobile power units were designed specifically for water, sewer, electric, park, police and fire departments to facilitate maintenance and emergency operations. For further information, write S & G Mfg. Corp., P. O. Box 1309, New Orleans 10, La., or you may use the Post Card on the colored page in this section. Circle No. 728.



GATE VALVES

When it is desired to install a gate valve for throttling purposes, or in a vertical pipe line, M & H double square bottom valves have many important advantages.

When valve is opened, each of the three shoes on both discs immediately contact the feathered edge of the tracks. These three contacts result in the disc being eased away instantly from the seat. The shoes then ride the tracks squarely and firmly for the full travel of the disc. In closing, discs ride the tracks down to a point exactly opposite the valve seat. At that point, the discs are clear and free to seat by action of the two spreaders, each functioning independently of the other. The tracks are stainless steel channels and the two side shoes are bronze-faced.

M & H double square bottom valve prevents the down stream gate from tilting into the down stream port opening and by chatter or vibration damaging the seat and gate rings. These valves can be installed with either disc on the down stream side.

Available in classes A, B, and C, sizes 3" and larger. Where needed, can be supplied with rollers; or rollers and scrapers. For complete information, write or wire M & H Valve and Fittings Company, Anniston, Alabama.

M&H PRODUCTS FOR WATER WORKS • FILTER PLANTS INDUSTRY • SEWAGE DISPOSAL AND FIRE PROTECTION

"57,000 Investors in Democracy"

HENRY FORD II

President, Ford Motor Company

"In the most practical way possible—the regular purchase of U.S. Savings Bonds—millions of Americans are demonstrating complete confidence in our form of government. Investors in democracy, they are freely staking their personal security on a fundamental faith in the future of our nation. I am proud that today more than 57,000 Ford Motor Company employees are participating in the Payroll Savings Plan. Last year they bought bonds worth $25,000,000 at face value, and this year the total of their purchases will be even greater. Through their thrift they are helping to keep America strong."

Few investment groups are as important to America as the members of the Ford Payroll Savings Plan. They are *important* in size—57,000 men and women... important in buying power—they actually purchase $25,000,000 in Savings Bonds every year... and *very* important to our economic stability—"through their thrift they are helping to keep America strong."

"Oh," someone may say, "Ford is a big company and they do things in a big way. It's easy for Ford to get thousands of people to sign up for the Payroll Savings Plan."

It was relatively easy for Ford, and it is easy for any company, large or small, to build a good Payroll Savings Plan *if*—(1) The head of the company recognizes the importance of the Payroll Savings Plan to the employees, the company, and the country; (2) *If* he will show the same degree of personal interest that Mr. Ford takes in the Ford Payroll Savings Plan.

If you would like to match Mr. Ford's Payroll Savings record—percentage-wise, of course—all you have to do is to see to it that a Payroll Savings Application Blank is placed in the hands of every man and woman in your company. It will help, of course, if you remind them, over your signature, that the Payroll Savings Plan is a safe and sure road to personal security.

The Savings Bond Division, U.S. Treasury Department, Washington, D. C., is ready to provide all the help you need in the way of Application Blanks, literature, and a complete outline of a simple, person-to-person canvass that will put an application blank in the hands of *every* one of your employees. Your employees will do the rest.

The United States Government does not pay for this advertising. The Treasury Department thanks, for their patriotic donation, the Advertising Council and

The American City

DEPENDABILITY

American cities depend on *sirens* for warning their citizens of air raid.

The citizen **depends** on prompt adequate warning systems.

Civil Defense Officials **depend** on the integrity of the manufacturer for proper engineering, surveys and a quality product.

The most **dependable** air raid warning siren is a Federal Thunderbolt or a Federal STL-10.

If your system is partially completed you can *depend* on Federal's recommendations for producing saturation coverage. Newly developed air raid signals like Federal's Thunderbolt and Federal's STL-10 have established new dollar values in the production of sound.

Federal Air Raid Sirens are available with DUAL-TONE construction to meet 1954 FCDA specifications.

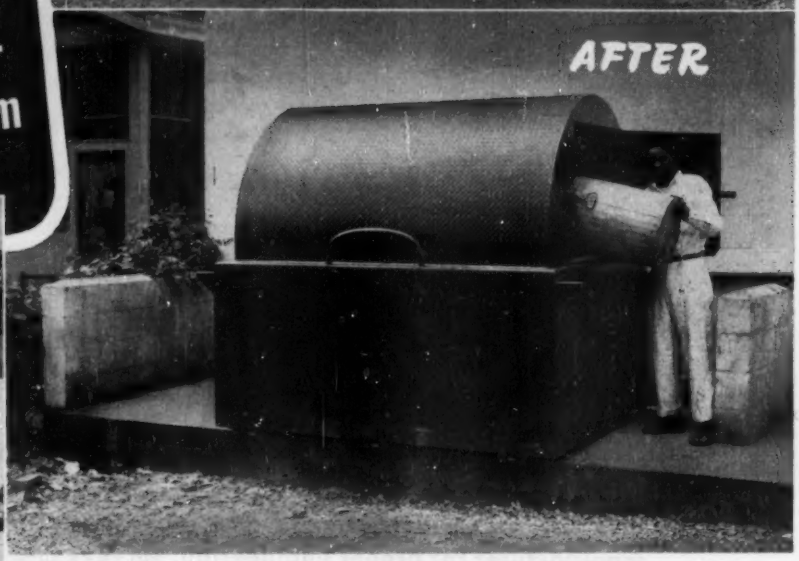
Write today for information and FREE literature.

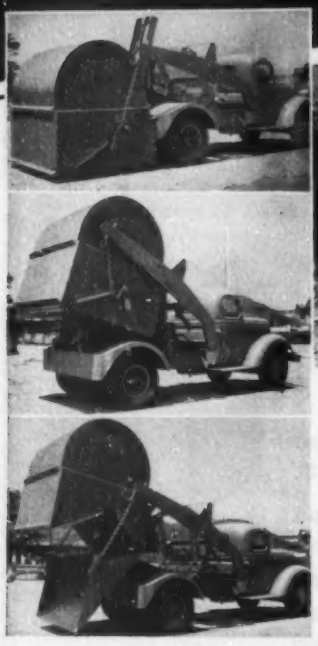
FEDERAL ENTERPRISES, Inc.

formerly: Federal Electric Company, Inc.

8756 South State Street • Chicago 19, Illinois

Thousands of Rat Infested Conditions like this one are being Cured by the Dempster–Dumpster System





Dempster-Dumpster is shown above in the three simple stages of picking-up, hauling and dumping a container, completing the cycle in one to two minutes by means of hydraulic controls at the finger tips of driver in the cab.

In this case, a Lexington, Ky. groceryman had done all he could within reason to make the most sanitary condition possible with conventional cans, including the added expense of an attractive concrete platform. Yet, look at the difference after a 10 cu. yd. Dempster-Dumpster Detachable Container replaced the cans, crates, barrels, etc. Multiply this case many times to include other stores, hospitals, schools, market, apartment and housing areas. Then, you can see how your city, too, can eliminate rat infested, unsanitary bulk rubbish handling with the *Dempster-Dumpster System*.

On schedule, one truck-mounted Dempster-Dumpster, with only one man, the driver, handles scores of containers, one after another. This system eliminates loading crews because there is no re-handling of trash. In addition, one truck-mounted Dempster-Dumpster does the work of 3 to 5 conventional trucks, reducing truck investment and operation costs. Without question, the *Dempster-Dumpster System* is the lowest cost method ever devised for bulk rubbish collection! Investigate the *Dempster-Dumpster System* now! A product of Dempster Brothers, Inc.

One Dempster-Dumpster Services All Containers . . . . All Designs . . . . All Sizes

Dempster Brothers, 824 Dempster Bldg., Knoxville 17, Tenn.

Opens West Coast Plant

Santa Clara, Calif., is the new West Coast home of "Century" asbestos-cement pressure pipe, according to Ernest Muehleck, president of the Keasbey & Mattison Co., Ambler, Pa. The 80-year-old company recently completed a new $2,750,000 plant there, situated on a 26-acre site some 40 miles south of San Francisco.

The pipe, a combination of asbestos fiber and portland cement, is finding increasing use in water systems throughout the country. Inexpensive to install, it won't rust or scale. In addition, reports Mr. Muehleck, it remains virtually impervious to soil corrosion.

The new plant has a total area of 182,300 square feet, 96,000 of which are devoted to raw material storage, and the remaining 86,300 square feet to manufacturing and other functions. It has a steel frame construction, roofed and sided with "Century" asbestos-cement corrugated sheets. The main building alone, is some 110 feet wide by 700 feet long.

One of ten, this newest Keasbey & Mattison plant is in Santa Clara, Calif.

Water Storage

Every type of water storage vessel, as well as several installations of purification and filtration plants are described and illustrated in this new catalog available from the Hammond Iron Works. Included are photographs of standpipes, elevated storage tanks, steel reservoirs, and filtration and purification installations. Also details of designs, and tables denoting sizes and capacities.

For your copy of Catalog H_2O, write directly to the Hammond Iron Works, Warren, Pa., or take advantage of the Post Card located on the colored page in this section. Circle No. 711.

Line Material Expands Plant Facilities

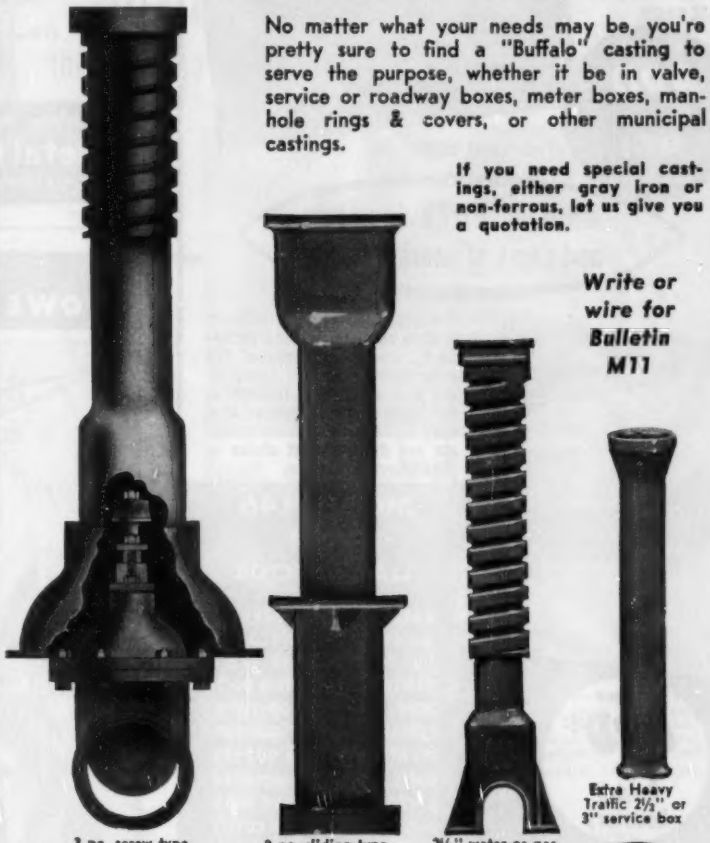
According to John M. Van Vleet, vice-president of manufacturing for the Line Material Co., Milwaukee 1, Wis., the firm is currently expanding production facilities at three of its plants. These include the Illinois Electric Porcelain Co. at Macomb, Ill., which L-M manages for the parent organization, McGraw Electric Co., and L-M's Kyle Products Plant and Central Plant, both located at South Milwaukee, Wis. New facilities at these plants should be ready for operation sometime this spring.

"BUFFALO" Municipal Castings come in every size and style!

No matter what your needs may be, you're pretty sure to find a "Buffalo" casting to serve the purpose, whether it be in valve, service or roadway boxes, meter boxes, manhole rings & covers, or other municipal castings.

If you need special castings, either gray iron or non-ferrous, let us give you a quotation.

Write or wire for Bulletin M11



3 pc. screw type 5¼" valve box.

2 pc. sliding type adj. 5¼" valve box

2½" water or gas ext. service box

Extra Heavy Traffic 2½" or 3" service box

All the new designs of "Buffalo" boxes are inter changeable with older "Buffalo" boxes—another big advantage of always insisting on "Buffalo" municipal boxes and castings.

BUFFALO PIPE & FOUNDRY

BUFFALO PIPE & FOUNDRY CORP.

BOX 55—STATION B DE. 6764 BUFFALO, N. Y.

with GOLDAK EQUIPMENT
you KNOW you get PPD*
PIN POINT DETECTION

MODEL 620
BOX & VALVE LOCATOR

Pin Point Detection of Goldak's Model 620, saves you time and money, with immediate location of Buffalo Boxes, Valves, Covers and Buried Metals.

Untiring operation, weighs only 8 lbs. Sturdily constructed, all-weather use. High quality parts assures maximum sensitivity, low operating and nominal replacement costs.

you get PPD* with Goldak Locators

*PIN POINT DETECTION

write for FREE literature and name of nearest dealer

The name GOLDAK, on electronic instruments, eliminates guesswork... your assurance of Pin Point Detection at all times, in any kind of weather. Throughout the world, with companies who need instruments that are accurate and durable, first choice is GOLDAK.

MODEL L46
SENIOR
LEAK DETECTOR

Detect costly leaks in water and low viscosity fuel lines, in their exact position. Completely portable, simple to operate. Latest electronic improvements and high quality parts, assures unequalled performance. Save time and labor, eliminate costly leakage with Goldak Model L46.

you get PPD* with Goldak Locators

*PIN POINT DETECTION

The GOLDAK Company
Leading Makers of PIPE LOCATORS
Since 1933

1544 W. GLENOAKS BLVD.
GLENDALE 1, CALIF.

I think that I shall never see... a stump as pretty as a tree!

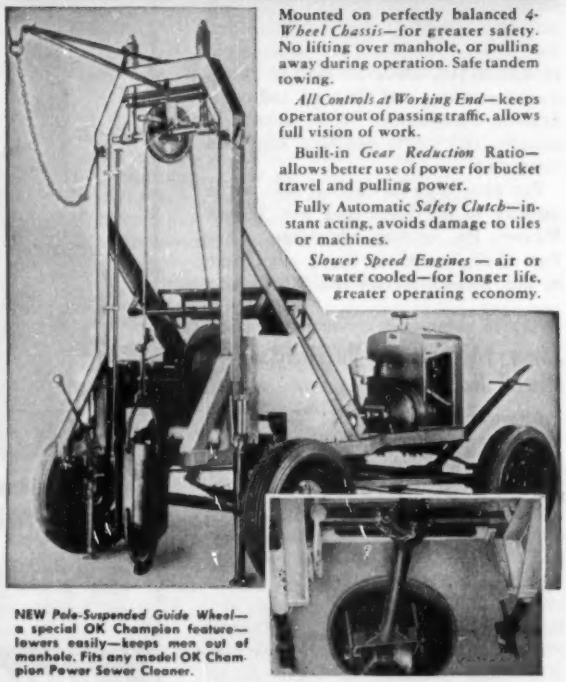
We admit this isn't good poetry, but it is the truth . .

First impressions are lasting. Let us hope these blemishes do not mar the beauty of your city.

If they do, let us show you how they may be removed, without traffic disturbance, damage to sidewalks, lawns, underground pipes or cables, perhaps in as little as one hour, depending on size and conditions . . . with the revolutionizing O'Brien Stump Cutter.

Manufactured and Sold Exclusively By
Metal Parts Machining Corp.
WATERVLIET NEW YORK

OK CHAMPION
POWER SEWER CLEANERS



Mounted on perfectly balanced 4-*Wheel Chassis*—for greater safety. No lifting over manhole, or pulling away during operation. Safe tandem towing.

All Controls at Working End—keeps operator out of passing traffic, allows full vision of work.

Built-in *Gear Reduction* Ratio—allows better use of power for bucket travel and pulling power.

Fully Automatic *Safety Clutch*—instant acting, avoids damage to tiles or machines.

Slower Speed Engines — air or water cooled—for longer life, greater operating economy.

NEW *Pole-Suspended Guide Wheel*—a special OK Champion feature—lowers easily—keeps men out of manhole. Fits any model OK Champion Power Sewer Cleaner.

Write for latest OK Champion Circular

CHAMPION CORPORATION 4716 Sheffield Ave. Hammond, Ind.

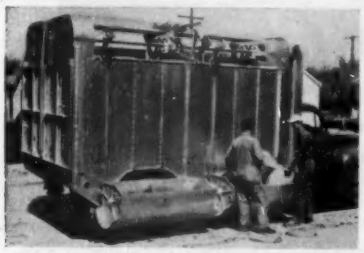
Easy-to-Read Street-Name Signs

Street-name signs made from 18-gauge zinc-coated bonderized steel, on 6-in. steel with 4-in. embossed letters and borders, are offered by Stello Products Co., Hutchinson, Kans. These signs have two coats of long-lasting baked enamel, and are designed with black letters on a white background, white letters on black background, or colors of your choice.

Two models, SN-4B and SN-4C, are furnished with four signs, readable from all four directions. SN-2C, the economy model, has two signs; one for each intersecting street. Plates may be added to the latter unit to give 4-way readability.

City officials interested in effective, low-cost street-markers, are asked to write the company direct, or use the Post Card on the colored page in this section. Circle No. 702.

Faster Garbage and Rubbish Pick-Up



Four buckets included on this refuse collection unit, and operating independently on tracks, distribute refuse evenly throughout the truck. For quick loading and lower pick-up costs, all four buckets may be used at once. Each is hydraulically operated from controls located in the cab and at the side of the truck body.

Municipalities using the completely enclosed Quad-O-Matic Loader, avoid both the spillage connected with open truck operation, and the necessity of using an unattractive rear bucket. Each loader has a tail gate that seals automatically, retaining liquids and drainage. A rear step accommodates the loading crew between stops.

Dumping with the new unit is a fast and efficient operation. The gate opens automatically as the body is raised. Therefore, the driver is able to take the load to the dump, dispose of it, and return; all without a helper. The Quad-O-Matic is constructed of lightweight aluminum, resulting in a larger body that will carry greater loads.

Full details are available from Equipment Mfg., Inc., 21550 Hoover Rd., Detroit 5, Mich. Write, or use the Post Card on the colored page in this section. Circle No. 700.

raise manholes this cost-saving way

fast, economical, safe

On your next resurfacing project you can do a permanent, secure job of raising manholes in a fraction of the time required by old methods if you use W-B Manhole Adapters.*

COMPARE THESE ADVANTAGES

1. ECONOMY—The "Manhole Adapter" is much less expensive to install than adjusting the manhole ring.
2. SAFETY—The "Manhole Adapter" is installed just prior to application of finish coat. No lights, no barricades needed.
3. Structural strength of street is not impaired.
4. Traffic not materially interfered with. Within reasonable limits, it continues while resurfacing is in progress.
5. The finished job presents a smooth, level appearance. In rolling for compaction, the "Manhole Adapter" and cover conform to street contour

* Registered U. S. Patent Office

WRITE FOR FULL DETAILS

Send for our new brochure today. Or better yet, mail blueprint of your standard manhole ring and cover and we will quote prices promptly without obligation.

SEND FOR NEW BROCHURE

A. Reed Wilson Co.,
1320 McGee St., Kansas City 6, Mo.

☐ Send me Brochure describing the W. B. Manhole Adapter.
☐ Enclosed is blueprint of our standard manhole ring and cover so you can quote price.

Name .....
Address .....
City ..... State .....

Every inch a fire fighter

Petaluma, California, is proud of these two new L-306 Internationals. Each has 169-inch wheelbase, pumping capacity of 1250 GPM. Both are radio-equipped, powered by 275-hp engines, with five-speed transmissions. The International hook-and-ladder in the background is a 1924 model, still in service.

Every International fire truck chassis is engineered two ways to fight fires better.

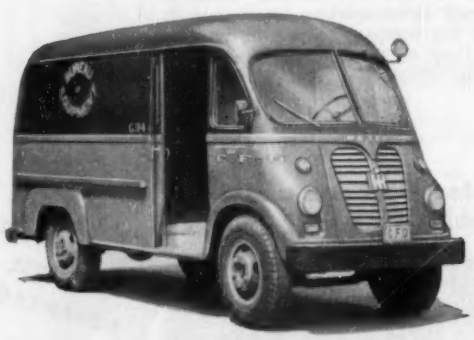
First, you gain from International's tough-job engineering. It has made International Trucks the heavy-duty sales leader for 21 straight years. That engineering gives you proved long life, lower maintenance cost.

Second, International fire truck chassis are specially designed to exceed every fire department requirement. They have flexibility, speed, and safety to spare.

You can choose from seven International fire truck chassis, with GVW ratings from 16,000 to 30,000 lbs. There are eight engines in the International fire-fighting line. Pumping capacities range from 500 to 1250 GPM.

Compare performance with other fire trucks. Compare price. Ask your International dealer or branch for more details.

INTERNATIONAL HARVESTER COMPANY • CHICAGO



To Keep the Big Red Ones Rolling. Chicago Fire Department uses two RM-150 Internationals with Metro® bodies for on-the-job maintenance. Body contains a complete repair shop, a stock of spare parts.

International Harvester Builds **McCORMICK®** Farm Equipment and **FARMALL®** Tractors . . . Motor Trucks . . . Industrial Power . . . Refrigerators and Freezers.

→ Get the News! Alex Dreier "Man on the Go," daily NBC Radio, sponsored by INTERNATIONAL Truck Dealers.

INTERNATIONAL® TRUCKS

"Standard of the Highway"

Digger Goes to Work on Landscaping Project

The Town Theatre, a drive-in movie in Detroit, Mich., embarked on a landscaping project recently, which involved the transplanting of some 250 trees from a suburban plot 15 miles away, to property surrounding the theatre.

Robert A. Patton of Patton Trenching was contracted to do the job, and he used a Sherman hydraulic backhoe-type earth digger, a piece of equipment that is generally associated with the digging of trenches and ditches. With the aid of this unit, it took one operator only eight days to uproot the trees and to dig holes for transplanting. Each tree was dug up in minutes; 70 trees were uprooted in eight hours.

The digger, made by Sherman Products, Inc., Royal Oak, Mich., is equipped for a wide variety of municipal chores. It is fully described in literature available from the manufacturer. Write directly, or use the Post Card on the colored page in this section. Circle No. 722.

Accessory Fire Protection Equipment

The Fyr-Fyter Co. is offering municipal and volunteer fire departments a new 66-page catalog, discussing a complete line of accessory fire protection equipment. Some 475 items are described and illustrated, including nozzles, valves, pumps and hose fittings.

Other accessory equipment such as first aid kits, oxygen and air masks, and warning and signal devices are also discussed. Convenient alphabetical and numerical indexes are provided for easy reference.

For your copy of the *Accessory Products Catalog*, write The Fyr-Fyter Co., 221 Crane St., Dayton, Ohio, using your letterhead. The catalog may also be obtained through use of the Post Card on the colored page in this section. Circle No. 712.

NIGHT & DAY

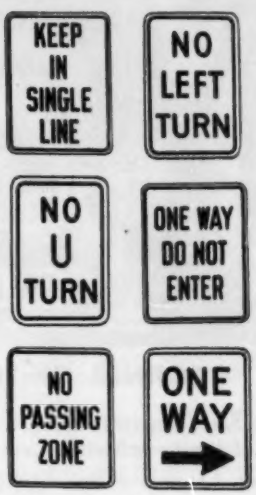
THOUSANDS OF TASSCO SIGNS . . . CLEAN . . . CLEAR . . . EASILY LEGIBLE . . . REGULATE AND GUIDE AMERICA'S MOTOR TRAFFIC TWENTY-FOUR HOURS A DAY, 365 DAYS A YEAR!

Nothing could be more economical than these well-made, extra long life signs . . . *the finest obtainable.*

TASSCO Signs are the result of the most modern manufacturing processes and expert engineering. Whether your need is for standard signs like these or for special signs made to specifications, be sure to consult TASSCO.

ALL ALUMINUM TASSCO SIGNS PROVIDE STRENGTH WITHOUT WEIGHT . . . MAXIMUM RESISTANCE TO WEATHER AND CORROSION . . . MINIMUM MAINTENANCE AND REPLACEMENT . . . AND GREATER LEGIBILITY FOR *MUCH* LONGER! That's *real* economy!

Traffic and Safety officials are invited to write for catalog.



The Sign of TASSCO Traffic Safety

TRAFFIC and STREET SIGN COMPANY
84 FOUNDRY STREET • NEWARK 5, N. J.

ANNOUNCING MORE

IMPACT

THAN EVER BEFORE!

A powerful vibrator that *maintains* its *kick* and speed EVEN IN EXTRA-STIFF CONCRETE!

Moves concrete faster WITHOUT extra high speed (which causes excessive wear of equipment).

Needs no special generator — just 110 volt AC or DC.

Mounted on rigid or swivel base that keeps motor out of dirt, and prevents sand blowing into armature.

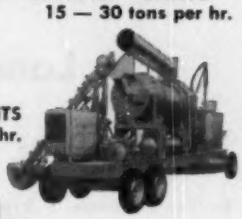
Satisfaction guaranteed. See it at your nearest WHITE equipment dealer.

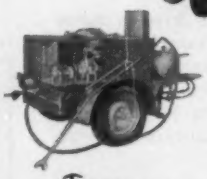
The NEW ME-13 vibrator with new 2 to 2½ HP motor —greater power in a smaller "package."

White

STATIONARY ASPHALT PLANTS
15 — 30 tons per hr.

PORTABLE ASPHALT PLANTS
10—15 tons per hr.





TAR KETTLES
65—300 gallon

TORCHES
3—20 gallon

For prices, catalog and name of your nearest dealer, write —

WHITE MANUFACTURING COMPANY
ELKHART 1, INDIANA

"CORNER OF THE WORLD"

In San Francisco, cable cars climb from the financial district to Nob Hill, cross Chinatown en route. San Francisco Bay Bridge threads across the background. Orient and Occident, East and West, meet here.

In many interesting locations you'll find ***FERRO*** signs . . . visible day or night; permanent porcelain enamel fused on finest steel.

On any street, road or highway, ***FERRO is the sign of good government.*** For full details, write:

FERRO ENAMELING CO.
1100 Fifty-Seventh Avenue Oakland 21, California

LETTER YOUR ROLLING EQUIPMENT

with our New Improved TRUCKSIGN TRANSFERS

- GREATER ECONOMY
- DURABILITY
- SIMPLE APPLICATION
- BRILLIANCE OF COLORS
- NO TYING UP OF EQUIPMENT
- EXTRA LONG STORAGE

SEND US YOUR PROBLEM — OUR TECHNICAL ADVICE IS *FREE*

Ward's TRUCKSIGN TRANSFERS

8504 LYNDON AVE.
DETROIT 38, MICHIGAN
A DIVISION OF WARD'S NAME PLATES

Shade Trees Get Better Pest Control

Protecting shade trees against insect parasites, a seasonal headache to the park official, is easier with the Rotomist pest-control concentrate applicator, newly re-designed by this company. Powered by a Willys Jeep 4-cylinder engine, the air delivery unit features a 29-in. axial flow fan, delivering 28,000 cubic feet a minute at 100 miles per hour.

The Rotomist, according to the manufacturer, covers large areas quickly, reaching the tallest shade trees. Airplane-type hydraulic controls rotate the turntable 360° right or left, assuring accurate on-target delivery. All controls featured on this unit are within easy reach of the operator.

Developed by the John Bean Div. of Food Machinery & Chemical Corp., Lansing, Mich., the re-designed Rotomist is available for truck or trailer mounting, or in a factory-mounted trailer model. For additional information, write the company direct, or take advantage of the Post Card on the colored page in this section. Circle No. 715.

If

Your City Needs

NEW REVENUE

Use

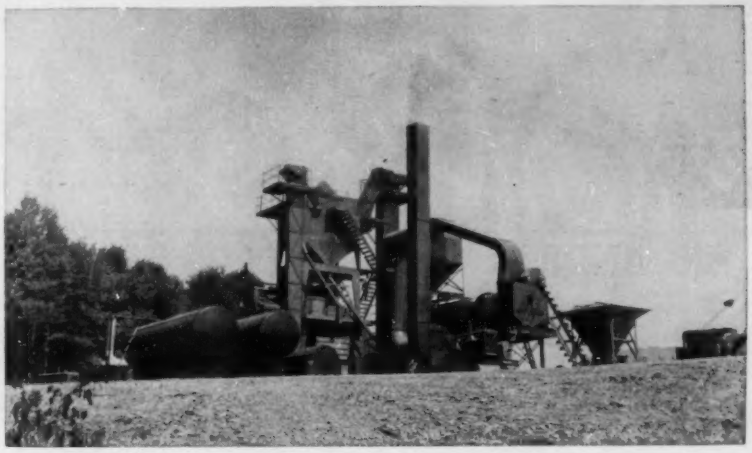
FROM THE STATE CAPITALS

reports to keep in touch with what other cities and states are doing to solve local fiscal problems. Coverage of other topics also available, according to your specialized needs. For details, write . . . .

Bethune Jones
234 River Road
Red Bank, New Jersey

The New, Improved

H & B TYPE "T" Asphalt Plant



Outstanding Efficiency In Both Production and Maintenance

Here, for the first time, is an asphalt mixing plant that gives you—in the basic plant—all of the major improvements and refinements of the past twenty years. An entirely welded structure, with no rivets and only a few bolts. Also, much of the loose bracing and miscellaneous pieces have been eliminated, making it possible to provide adequate working space and platforms with a minimum of pieces to move.

Other improvements include: all overflows are self-contained and internal in the bin; self-contained dust bin, which is an integral part of the bin structure; elimination of the screw conveyor normally used to feed dust into the aggregate weigh-box, thereby making possible a lower original investment in plant, and assuring lower maintenance costs and decreased possibility of breakdown.

This new Type "T" plant has already proved its dependability and efficiency, with outstanding records in both production and maintenance. Available with all units driven by individual electric motors and completely wired, with gasoline or Diesel engines on the main units and electric drive on the smaller units, or with gasoline or Diesel drive throughout. Complete information will be furnished on request.

H&B ESTABLISHED 1907

HETHERINGTON & BERNER INC.

America's First Builders of Asphalt Mixing Plants

737 KENTUCKY AVENUE INDIANAPOLIS 7, INDIANA

PROTECT YOUR TREES

from pests and pestilence with

John BEAN *ROTOMIST*

Fast, thorough, and dependable protection for shade trees, parks and recreational areas is a simple matter with the new John Bean Rotomist. Completely re-designed, this new unit offers more performance-per-horsepower than has ever before been possible because of the new "straight-through" method of air handling. Powered by a famous Willys "Jeep" engine, the air delivery unit has a 29-inch axial flow fan which delivers 28,000 cubic feet a minute at 100 miles velocity.

Accurate "on-target" delivery is easy with the airplane-type hydraulic controls that rotate the turntable 360° right or left and aims the counter-balanced discharge outlet through a 110° arc.

The spray system includes the new John Bean Royalette enclosed oil-bath, plunger-type pump that delivers 7 gallons per minute at 400 pounds pressure; cone type nozzles that are easily detached to allow adjustment to the desired flow; a 100-gallon tank made of heavy gauge steel, and triple-jet agitation in the tank.

The unit is available for either truck or trailer mounting, or can be purchased in a factory mounted trailer model.

Write for the new Rotomist catalog for more complete information.

fmc

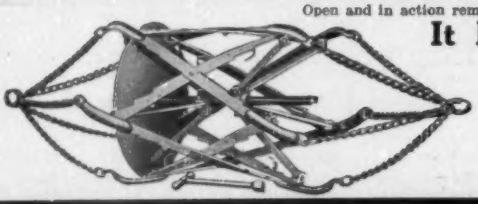
John BEAN

DIVISION OF FOOD MACHINERY AND CHEMICAL CORPORATION

LANSING 4, MICH. • SAN JOSE, CALIF.

EXPANDING ROOT CUTTER & SEWER CLEANER

Open and in action removing roots and caked sediment like this.



It Fits in on Every Sewer Cleaning Job

Adjusted in 30 seconds to fit any sewer from 8 to 30 inches.

Will clean the entire sewer wall, top, and sides as well as the bottom, cutting and removing the roots and caked sediment, putting the sewer system in almost 100% clean condition.

Write for our new catalog on complete sewer cleaning equipment.

EXPANDING SEWER MACHINE COMPANY

108 East Walnut St. **Nappanee, Ind.**

Is Your City Up-to-Date in Its Operation Methods?

THE AMERICAN CITY
470 Fourth Ave., New York 16, N. Y.

Please send me ..... copy (copies) of your Municipal Official's Handbook (Price per copy is $3.00)

A check covering this order is enclosed ..... Please bill me ..... (Check one)

Name .....

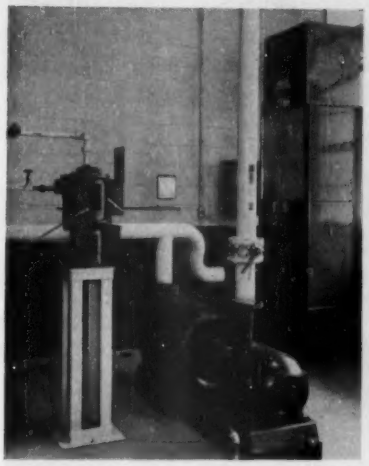
City or Company .....

Address .....

City..... Zone..... State.....

A good way to find out is to read about the practical experience of other city officials who have problems like yours. This experience is described in the "Municipal Official's Handbook" by William S. Foster, Engineering Editor of *The American City*. The latest methods on street construction and maintenance, snow removal, street cleaning, and refuse collection and disposal are explained in detail. Write us today for your copy.

Clean Air for Activated Sludge Plants



A Precipitron air cleaner, in the background, takes air from the atmosphere, cleans it, and releases it to the air compressors in a small industrial plant. A similar installation may be used by sewage treatment plants.

Clean air for activated sludge treatment can be guaranteed by using a push-button Precipitron electronic air cleaner on the entering side of the air compressor, according to the Westinghouse Electric Corp., Dept. T-491, 200 Readville St., Boston 36, Mass. Dust removed from the air prevents clogging of the diffuser tubes and plates, insuring these units a longer, maintenance-free life.

The Precipitron cleaner, reports Westinghouse, has been used successfully for some years now in industrial applications that require a much higher degree of air purity.

Additional data are available on request from the manufacturer. Write directly, or take advantage of the Post Card on the colored page in this section. Circle No. 723.

Extends Autocar Line

The Autocar Div. of the White Motor Co., Ardmore, Pa., announces a wider range of models in this year's standard Autocar series, offering a varied choice in chassis, engines and other units. The company can now design a custom-built truck by selecting from 8 engines, 19 transmissions, 7 auxiliary transmissions, 14 rear axles and 3 cabs.

The Division, which moves from its original home in Ardmore early next May, will build the new lines in a $2,000,000 manufacturing plant located some 15 miles out on Lincoln Highway near Exton, Pa.

Changes in the Autocar line include a straight truck, dump truck, 6-wheeler and tandem tractor added to the 65 series, and equipped with Autocar Standard Six or V/8 engines. The Autocar 75 line will be available in tractor and 6-wheeler, and the 102 and 103 series of big diesels will come in straight trucks, tractors, dump trucks, 6-wheelers and one model is expected to feature a sturdy V/8 engine.

Two special West Coast lightweight trucks are also available, making wide use of aluminum in the cab, engine, chassis and body parts. These vehicles are built to specifications complying with the various state regulations.

Additional data are available by writing directly to the company at Ardmore, Pa., or use the Post Card on the colored page in this section. Circle No. 730.

132 YEARS OF SERVICE

CAST IRON PIPE

Depicted above is a Cast Iron water main in Philadelphia in constant use for 132 years and still going strong.

In Europe, authentic records show Cast Iron water mains in service over 300 years.

Cast Iron pipe installed over a century ago in 35 American cities is still giving satisfactory service. (Authenticated records on file.)

While our American cities are too new to determine the useful life of Cast Iron water mains, municipalities are convinced that 150 to 200 years is a conservative estimate.

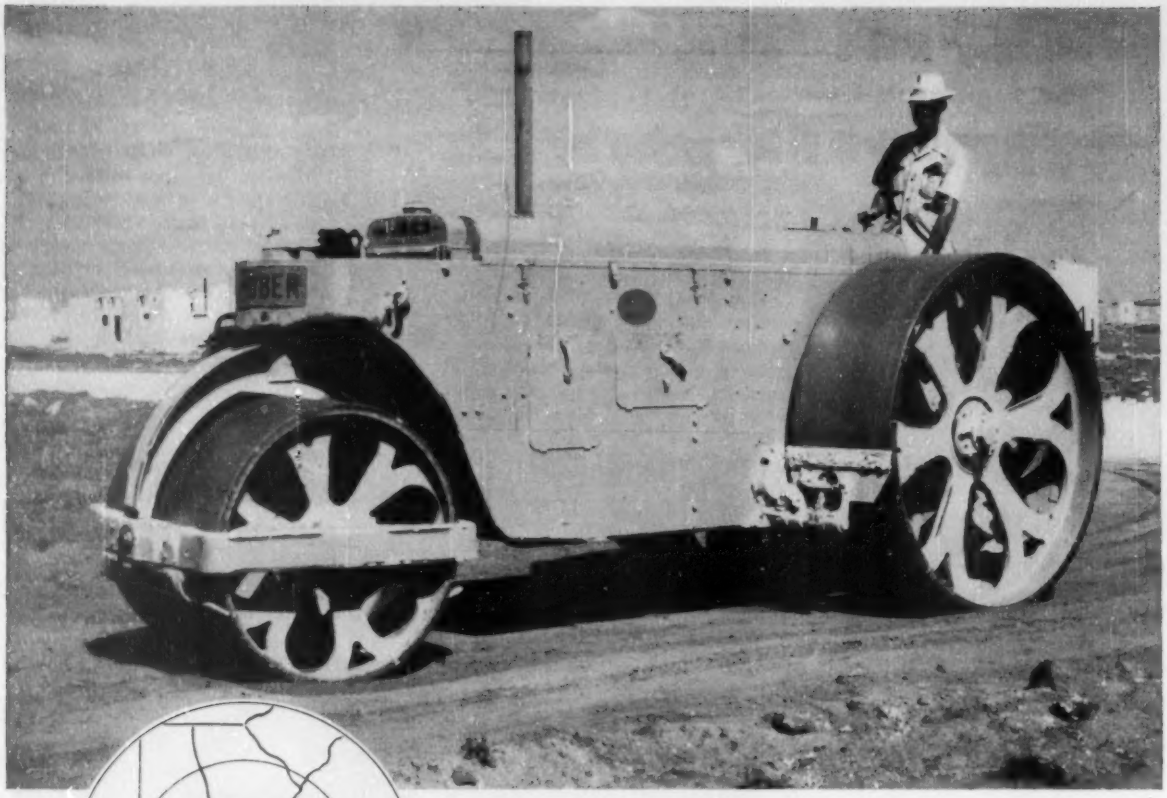
Cast Iron Pipe costs less per year of trouble-free service.

★ ★ ★ ★ ★

Woodward Iron Company does not manufacture pipe, but we supply leading Cast Iron Pipe foundries with high grade foundry pig iron from which pipe is made.

WOODWARD IRON COMPANY

WOODWARD, ALABAMA



Florida Contractor Holds a winning Pair... TWO HUBERS

SECOND HUBER 10-TON ROLLER HELPS FIRM EXPAND

A Miami, Florida contractor who has built streets for many residential developments is the owner of two Huber rollers — a winning pair.

Five years ago the company bought its first Huber 10-ton three-wheel roller. The second one was added in 1951.

The procedure used on many projects is to sprinkle and roll an 8-inch course of lime rock to a smooth, hard surface which then is swept and sealed with asphalt at the rate of 3/10 gal. per square yard. This is covered with screenings or coarse sand.

This firm's experience with Hubers is typical, for Huber rollers make friends wherever they are used. Expert design and quality construction pay off in terms of fast, powerful and dependable service. Talk to your nearest Huber Distributor about dependable Huber road machinery. You, too, will like it.

HUBER MANUFACTURING COMPANY
MARION, OHIO, U.S.A. — Since 1853

HUBER

MANUFACTURERS OF HUBER MAINTAINERS, GRADERS AND COMPLETE LINE OF ROLLERS

New Crane Used at Airports

Airport officials especially, should be interested in this latest development in the materials handling field; a new hydraulic crane that operates indoors and out. An adaptation of a machine originally designed for the U. S. Navy, the self-propelled unit has been made available for civilian use by the Austin-Western Co., Aurora, Ill.

According to the manufacturer, four functions are involved in the hydraulic operation of the crane: turntable rotation, boom elevation, raising and lowering the cable and hook, and power extension and retraction of the boom. Steering, too, is actuated by hydraulic power.

The new crane features 360° boom rotation, 24-ft. horizontal reach from center of rotation, and a 24-ft. vertical lift from ground level to hook. Under a full load, the crane will negotiate grades up to 20% or travel at a road speed of 15 mph.

Write the company, or use the Post Card in this section. Circle No. 714.

HEAVY-DUTY
ELLIS PIPE CUTTER
FOR CUTTING LARGE SIZE PIPE

Drop-Forged Frame and Links

Long-Lasting Cutter Wheels

Makes a Hit With Water Works Men

Cuts Pipe In or Out of Ditch

TWO SIZES
No. 01 for 4" to 8" Pipe
No. 1 for 4" to 12" Pipe
Write for Circular and Price List No. 35AC

ELLIS & FORD MFG. CO.
FERNDALE 20, MICH.

UNDERGROUND PIPING JOBS DONE IN LESS TIME AT LOWER COSTS

Here's the quick, simple way to install pipe under streets, walks, tracks, floors and lawns. With a GREENLEE Pipe Pusher *one man* pushes pipe *under* obstacles. No tearing up concrete, lawns, floors. Eliminates extensive ditching . . . no tedious tunneling, back-filling, repaving. Cuts job time to a fraction . . . GREENLEE Pipe Pusher often pays for itself on first job. Get facts today.

GREENLEE

Greenlee Tool Co., 2022 Columbia Ave., Rockford, Ill.

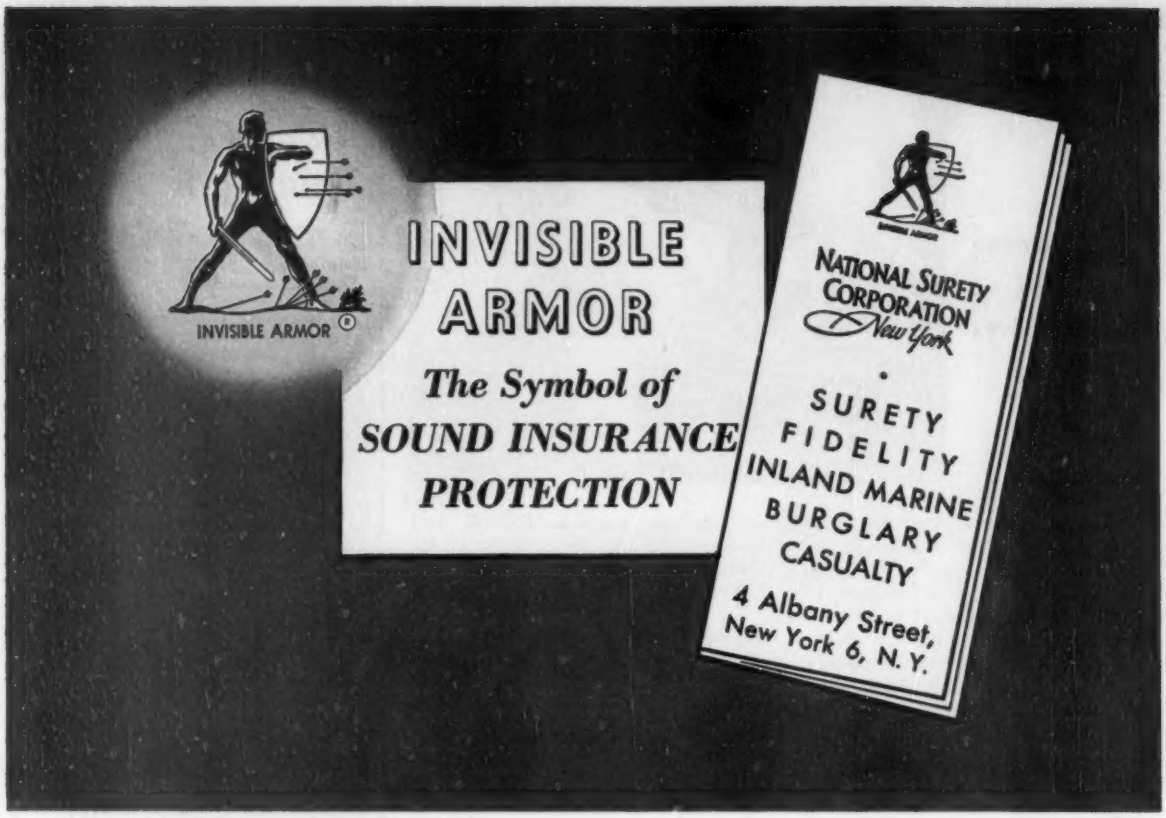
SINCE 1885
GRUENDLER
The Choice of Municipal Plants
32 units and 24 installations IN **1953**

Orange County Sanitation Dist., Santa Ana, California
City of Newton, Iowa
Stege Sanitary Dis., Contra Costa County, California
City of Longview, Washington
TWA Hangar, Lambert Field, St. Louis, Missouri
Richmond-Sunset Sewage Treatment Plant, of San Francisco, California
City of Lewistown, Penna.
North Carolina Sanitorium, McCain, North Carolina
Newark State School, Newark, Wayne County, New Jersey
City of Valparaiso, Indiana
Williamsport Sewage Plant, Williamsport, Penna.
City of Spencer, North Carolina
City of Atlanta, Georgia
Gerber Products Company, Rochester, New York
City of Gladwin, Michigan
City of Conshohocken, Penna.
City of Salem, Mass.
City of Beaumont, Texas
Frankford Plant, Philadelphia, Penna.
Manchester 8th School & Utilities Dist., Manchester, Conn.
Grand Rapids Sewage Plant, Grand Rapids, Michigan
City of Fall River, Mass.
Sewage Treatment Plant, District of Columbia
Middletown Homeopathic Hospital, Middletown, Orange County, N. Y.
City of Rittman, Ohio

Gruendler Sewage Screening Shredder in connection with two Link-Belt Bar Screens, San Francisco, Calif.

GRUENDLER
SEWAGE—GARBAGE SHREDDERS
Disintegrate wastes, including rag stock, for continuous flow!
Bulletin S.G. 10, mailed on request.

GRUENDLER
Crusher & Pulverizer Co.
2915 N. Market St., St. Louis 6
MISSOURI



FILTER SAND AND GRAVEL

Produced from an inland pit hence free from river contamination and foreign matter.

Shipment in bulk or bagged.

Many of the larger filter plants throughout the United States are equipped with our products.

PROMPT SHIPMENT

Inquiries and orders solicited.

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Muscatine, Iowa
P. O. Box No. 307 Phone: 4261

A STATEMENT OF ADVERTISING PRINCIPLES

1. Good Advertising — aims to inform the consumer and help him to buy more intelligently.
2. Good Advertising — tells the truth, avoiding misstatement of facts as well as possible deception through implication or omission. It makes no claims which cannot be met in full and without further qualification. It uses only testimonials of competent witnesses.
3. Good Advertising — conforms to the generally accepted standards of good taste. It seeks public acceptance on the basis of the merits of the product or service advertised rather than by the disparagement of competing goods. It tries to avoid practices that are offensive or annoying.
4. Good Advertising — recognizes both its economic responsibility to help reduce distribution costs and its social responsibility in serving the public interest.

Advertising Federation of America

New Motor Grader Attachment

Easier ditching and windrowing are the expected results of this recent addition to the Model 503 tandem drive motor grader. The new attachment, a circle turning mechanism, is actuated be a heavy-duty hydraulic motor, and is connected to the motor by an enclosed worm reduction gear and spur pinion gear. This last gear, according to the company, meshes "with the teeth on the circle."

The circle itself, has a turning range of 140°, and is rotated by moving a lever on the operator's platform. The operator can stop turning at any point, leaving the hydraulic system to furnish an automatic lock.

Various other attachments available with Model 503 include a hydraulically-operated rear-end loader, a scarifier, V snow plow, and a windrow eliminator. For further information, write The Galion Iron Works & Mfg. Co., Galion, Ohio, or you may use the Post Card on the colored page in this section. Circle No. 703.

Portable Electric Generator

The Wincharger Corp. reports stepping up the continuous operating capacity of its portable engine-generator, Model F4500, from 2,500 watts to 3,000 watts. This unit has a motor-starting capacity of 4,500 watts.

Wincharger's new F Series Winco engine-generator includes a belted feature that facilitates engine operation at recommended speed, and generator operation, at 3,600 rpm. Also a universal mounting base that enables you to specify either a Briggs & Stratton or Wisconsin engine, or, if you already have an engine, to purchase the generator alone.

Model F4500 supplies AC current at 115 volts, 60 cycles, single phase. A Speedy-Shift portable base is available as optional equipment.

For detailed information, address the Wincharger Corp., 2111 E. 7th St., Sioux City, Iowa, or use the Post Card on the colored page in this section. Circle No. 704.

Complete Line for Photo-Copying

The copying of municipal records has increasingly become a mechanical process and the camera, because of its fidelity, legal acceptance, and simplicity, is a popular copying tool. More and more accessory equipment has been devised for developing, making additional copies, and fast drying.

A complete line of photo-copying equipment is offered by Peerless Photo Products, Inc., Shoreham, L. I., N. Y.

The Tupper-Peerless camera, for high-speed photo-copying on a continuous roll, produces 720 prints an hour, or one every 5 seconds, for cards or letters either 11- or 14-in. The camera is mounted on rubber wheels for rolling up to the file, rather than the material being moved with the danger of damage or loss of valuable records.

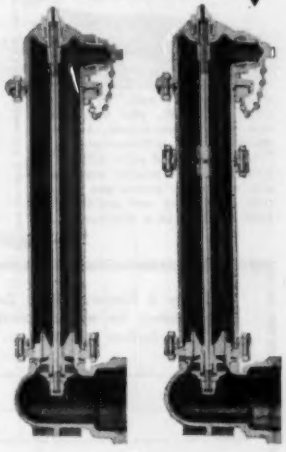
The Dri-Stat office photocopy is said to be able to do a large part of copying now done by typewriter and photostat machine. No dark room or copy reading are required. Other devices include continuous rotary printers and dryers, a reducing camera, and paper, cloth and film.

Illustrated literature describes each item. For "Equipment and Materials for Photo-Copying," write the manufacturer direct, or you may use the Post Card located for your convenience on the colored page in this section. Circle No. 701.

Friction's needed for a match but it's no help in a fire hydrant

Friction causes loss of water pressure and reduces the effectiveness of fire-fighting equipment. That's why R. D. Wood Hydrants are designed to cut friction way down—and why so many communities rely on them for fire protection.

The R. D. Wood Hydrant can be furnished with breakable flange and stem coupling at extra cost. Both are built to break with a heavy blow. This saves the hydrant itself and makes repair quick and easy. ▼



THE R. D. WOOD SWIVEL JOINT HYDRANT: ▶ All internal parts, including drain valve seat, removable through barrel • all-bronze stuffing box • completely revolving head • compression-type valve, cone shaped to prevent water hammer • automatic drain valve • bronze main valve seat screws directly into elbow with straight, not tapered threads • mechanical-joint pipe connections if specified

R.D. Wood Swivel Joint Hydrants

Public Ledger Building, Philadelphia, Pa.

Manufacturers of "Sand-Spun" Pipe (centrifugally cast in sand molds) and R. D. Wood Gate Valves

HAVE AN ADEQUATE WATER SUPPLY ALL YEAR ROUND!

with the exclusive **RANNEY®**

WATER COLLECTOR FOR YOUR CITY

Now in use by the following volume water consumers: American Cyanamid Co., Wallingford, Conn.; Boise Water Corporation, Boise, Idaho; E. I. DuPont deNemours & Co., Inc.; Granite City Steel Co., Granite City, Ill. City of Manitowoc, Wis.

Millions of Gallons

The Ranney Collector is a unique kind of "well." It can produce more pure, cool water from one well, for less money, than ever possible before, with multiple wells. This greater yield adds millions of gallons to your present water supply, with fewer pumps and personnel. Installation and maintenance costs are held to a minimum.

Eliminates Filters

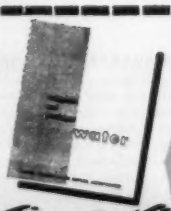
You can avoid the cost of maintaining an elaborate filter plant and water treatment station. The Ranney Method of water collection supplies a huge volume of naturally filtered water through exclusively engineered, screened horizontal well points that never clog. It pays to investigate the Ranney Method today!

I believe a Ranney Water Collector can save money for my community. Please send me further information.

Name.....

Company.....

Address.....

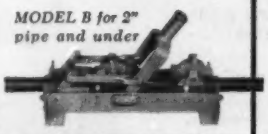


RANNEY METHOD WATER SUPPLIES, INC.
Water Supply Engineers and Contractors
841 Alton, Columbus 19, Ohio · Dept. AC-2

The TROJAN pipe puller & pusher

MODEL A for ½" to 1" pipe

MODEL B for 2" pipe and under



WRITE TODAY FOR FULL DETAILS

With a Trojan, no resetting of grip is required—job goes twice as fast. Heavy duty, all steel construction makes it 4 times stronger than cast iron pusher.

Model A needs only 5 ft. trench. One man can easily lift it in and out of trench and install the average service. 15 tons of pushing pressure possible.

Model B has 3 pushing speeds for different soils. Reversible in 30 seconds.

Double XX heavy, 30" push pipe travels straighter.

The TROJAN Manufacturing Co.
1113 Race Drive • Troy, Ohio
41 Greenway, Hamden, Conn. • Box 465, Memphis, Tenn.

Public Property *PROTECTION* is our business

For your protection Stewart produces chain link wire and iron picket fence; wire mesh partitions; wire window guards; steel folding gates. Also flagpoles; settees; bronze plaques and other metal specialties. Write for catalogs. Please mention products in which you are especially interested.

THE STEWART IRON WORKS CO., INC.
2021 Stewart Block, Cincinnati 1, Ohio
Experts in Metal Fabrications since 1886

Stewart IRON and WIRE FENCES

Costs Less to Clean Outdoor Arenas

A low-cost machine adept at sweeping parking areas, ramps, tunnels, and passageways, is recommended for use at municipal stadiums and airports. Designed by the Wilshire Power Sweeper Co., it is said to take the place of 40 men with brooms, doing a cleaner job in less time.

Each Wilshire power sweeper is equipped at the front with a trash collector that picks up cartons, bottles and other bulky debris. The sweeper, meanwhile, picks up finer matter and dust, and a side sweeper gets into corners and gutters.

A detailed description of the new unit is available on request from the Wilshire Power Sweeper Co., 526 W. Chevy Chase Dr., Glendale 4, Calif., or take advantage of the Post Card on the colored page in this section. Circle No. 718.

WHY BUY SEWER CLEANING EQUIPMENT

- We will lend you equipment to maintain your sewers, at a charge generally less than the cost of your equipment upkeep.
- A completely equipped sewer department at your disposal, when you want it, with no equipment or supervisional problems.
- It is economical, and good business, to eliminate sewer trouble, by preventive cleaning.

Thomas Drain Service
Home Office - 35 S. College St., Akron 8, Ohio
Collect Phone Calls Accepted
Call BLackstone 2212 Akron, Ohio

American Vacuum Leaf Loader
Solves your leaf or clean-up problem

Write for leaflet
LEAF LOADER DIVISION
American Structural Steel and Tank Co.
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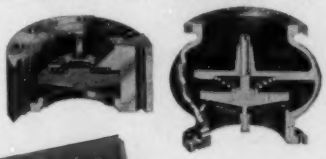
Get the Facts!
about WATER HAMMER
and how you can
ELIMINATE THIS
COSTLY NUISANCE
with

WILLIAMS-HAGER
FLANGED
Silent
CHECK VALVES

Yes—you can put an end to costly, dangerous water hammer in your piping system—NOW—with Williams-Hager Flanged Silent Check Valves. Compact and durable, they can be installed without special tools—in any position. Built for years of silent service, they are available in standard pipe sizes from 1" to 20". Investigate today!



WRITE FOR BULLETIN WH-851

This bulletin contains all the facts about water hammer—its cause, effect and control. Write for your copy!

CHECK VALVES
THE WILLIAMS GAUGE CO., INC.
3013 Pennsylvania Ave., Pittsburgh 33, Pa.

MAIL THIS COUPON TODAY

THE WILLIAMS GAUGE CO., INC.
3013 Pennsylvania Avenue
Pittsburgh 33, Pa.

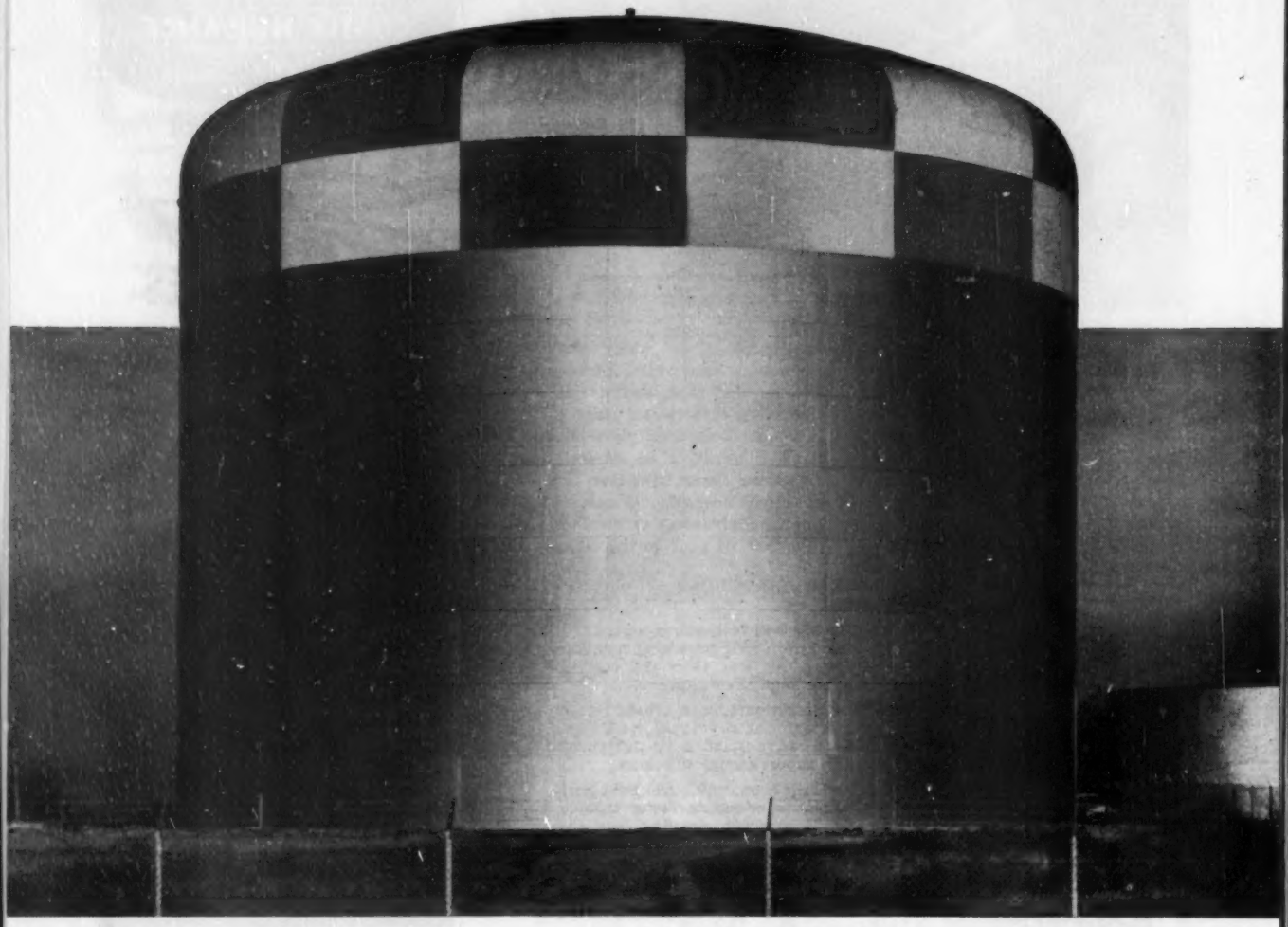
Please send a copy of Bulletin WH-851 on "Water Hammer, Cause, Effect and Control in Piping Systems."

NAME_____
TITLE_____
COMPANY_____
ADDRESS_____
CITY_____ ZONE___ STATE_____

NOW—America's Largest Standpipe

(CAPACITY 7,268,000 GALLONS)

for South Pittsburgh Water Company



by PITTSBURGH •DES MOINES

This huge water storage unit evidences typical Pittsburgh-Des Moines fine workmanship in shop fabrication and field erection. Measuring 116 feet in diameter, with a water depth of 95 feet and total capacity of 7,268,000 gallons, the South Pittsburgh Water Company giant is the largest standpipe-type storage tank built in America to date. • Let us quote on your water storage needs.

PITTSBURGH-DES MOINES STEEL CO.

Plants at PITTSBURGH, DES MOINES and SANTA CLARA

Sales Offices at:

PITTSBURGH (25).....3412 Neville Island
NEWARK (2).....215 Industrial Office Bldg.
CHICAGO (3). 1216 First National Bank Bldg.
LOS ANGELES (48).....6399 Wilshire Blvd.
DES MOINES (8).....913 Tuttle Street
DALLAS (1).....1217 Praetorian Building
SEATTLE.....520 Lane Street
SANTA CLARA, CAL.....619 Alviso Road

Light Weight Stressed in New 18-Inch Mower

The long, high handle keeps the operator at a safe distance from the machine.

Housed in die-cast aluminum, the new 18-in. model Lawn-Boy rotary power mower weighs less and is easier to clean. It has a side trim slot that trims to within ⅜-in. of obstructions, and staggered front wheels that assure contour cutting. A front discharge sprays clippings away from the operator, without forming windrows.

Designed by the RPM Mfg. Co., Dept 114, Lamar, Mo., the mower has a handle that, without tools, may be quickly attached or detached. A 45 cu. in. muffler muffles and lowers sound to a pleasant pitch and directs engine exhaust gases away from the operator.

Each 18-in. unit is powered by an Iron Horse engine in a 2-cycle, 1½ hp direct drive, made of die-cast aluminum parts. Gasoline-powered models are available with the new Pulverator leaf mulcher attachment that grinds leaves to a fine mulch, spreading them evenly over the lawn.

Detailed literature will be sent by the manufacturer on request, or you may use the Post Card on the colored page in this section. Circle No. 731.

Stamped & Embossed

Letters & Figures

In polished brass or aluminum; Roman styles in ½" to 6" heights; HyCaste Condensed in 4" height, and Deluxe plaque style in 4" height.

Ask your jobber or write for Bulletin

PREMAX PRODUCTS
DIVISION CHISHOLM-RYDER CO., INC.
5443 Highland Ave., Niagara Falls, N. Y.

Would You Trade

50¢ *for* $1.00 ?

LAKE SHORE

Lifetime ALUMINUM Street Name Signs

Double Your Money!

. . . YEAR AFTER YEAR!

✓ REDUCED MAINTENANCE
✓ LOOK BETTER ✓ LAST LONGER

WRITE FOR FREE CATALOG - SAMPLE OFFER

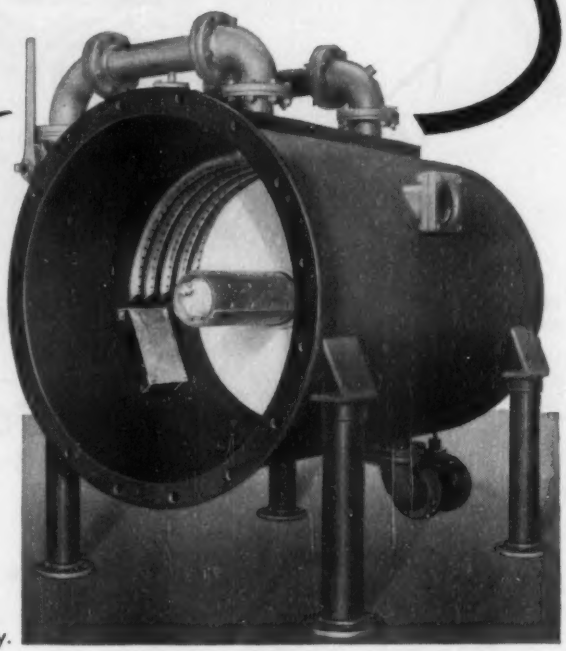
Lake Shore Markers 654 W. 19th St. Erie, Pa.

CABLE ADDRESS - "LASHMAR", ERIE, PA.

A new trend in municipal water filtration –

The SPARKLER DIATOMITE FILTER MODEL SCJ

has been highly successful in installations now in operation



Reduced operating cost due to long filtering cycles and fast backwash cleaning, together with a remarkably low bacteria count requiring a minimum of chlorination, are features that make this new type filter worthy of the attention of all waterworks engineers.

Practically any volume of city water can be filtered economically in the Sparkler SCJ filter. Single units capable of handling 5,000,000 gallons of water a day are available. Multiple units can be engineered into a system for larger requirements.

Less than 0.2% of water is required to backwash and clean the largest filter units and a complete fresh precoat of diatomite can be applied and the filter ready to resume operation in 15 minutes.

Operators can be easily trained, no highly skilled specialized personnel is required to insure efficient performance.

Write for plans and prices on your requirements. Address Dan Baldwin for personal service.

SPARKLER MANUFACTURING CO.

Home office and plant, Mundelein, Ill.

EUROPEAN PLANT
Prinsengracht 876
Amsterdam, Holland

CANADIAN PLANT
Galt, Ontario

Manufacturers of industrial filters for over a quarter of a century.

MIROFLEX

America's Finest

COMPLETE SIGN LINE

Here's the line that has everything that your community will ever need in the way of signs, from standard street name assemblies and traffic control signs to special order jobs that meet your most exacting specifications. All Miro-Flex signs are manufactured to meet standards established by the U. S. Public Roads Administration. They are embossed on zinc-coated, Bonderized steel and finished with the best baked-on enamel. *Write today for prices and your copy of Miro-Flex's catalog.*

THE MIRO-FLEX CO., INC.
1824 EAST SECOND STREET WICHITA, KANSAS

Paints Traffic Signals

Sheboygan, Wis., traffic signals wear coats of yellow paint, applied by members of the city painting crew, using line markers with a spray gun attachment. These markers are made by the Meili-Blumberg Corp., New Holstein, Wis. It takes 90 minutes to spray four signal units.

Two Ways to Clean Sewers

Two ways to keep sewers clean were demonstrated at the Los Angeles Sewer Maintenance Section of the California Sewage and Industrial Wastes Association, recently. One was through the use of a new rodding machine; the other, through the use of large rubber balls.

The rodding machine is a product of Rodding-Cleaning Machines, Inc.: Los Angeles, Calif. Its use was demonstrated by C. "Bud" Sketchley, president of the company. Ball-type sewer cleaning was illustrated by Sydney Preen, superintendent of sewer maintenance, Long Beach, Calif., who showed a movie of the Sidu Company's Wayne sewer-cleaning ball in action.

MANUFACTURER'S REPRESENTATIVES WANTED

to sell to counties, cities and towns—

a complete line of Traffic Signs utilizing Reflexite, the reflecting material now used on super highways such as Merritt Parkway, New Jersey Turnpike, etc. Also barricades, delineators, street name signs and traffic paint.

For complete information, write to

Reflexite Corp.

63 Wall Street, New York 5, N. Y.

New reasons why.. Sherman Power Diggers give you More for '54

NEW "STRESS-DESIGNED" DIPSTICK, BOX-TYPE CONSTRUCTION
NEW REINFORCED BOOM, EXTRA BEARING SURFACE FOR LONGER PIN AND BEARING LIFE
NEW DOUBLE-BRAID HOSES FOR MAXIMUM DEPENDABILITY
NEW SWING CONTROL SYSTEM GIVES BETTER CONTROL, SMOOTHER ACTION
NEW REGULATOR VALVES FOR SMOOTH, POSITIVE CONTROL OF LIFT AND CROWD CYLINDERS

Important new features, combined with advantages proven by thousands of users, add up to more production for your digging dollar! The Sherman Hydraulic Power Digger is designed and built for that wide range of job requirements beyond the economical use of hand labor and below the efficient use of larger equipment. Yes, between the smallest and largest jobs, you'll find there's always a place for your Sherman Power Digger! Ask your nearby Sherman dealer for an on-the-job demonstration today. Write for free literature, Dept. D49.

Sherman
PRODUCTS, INC.
ROYAL OAK, MICHIGAN

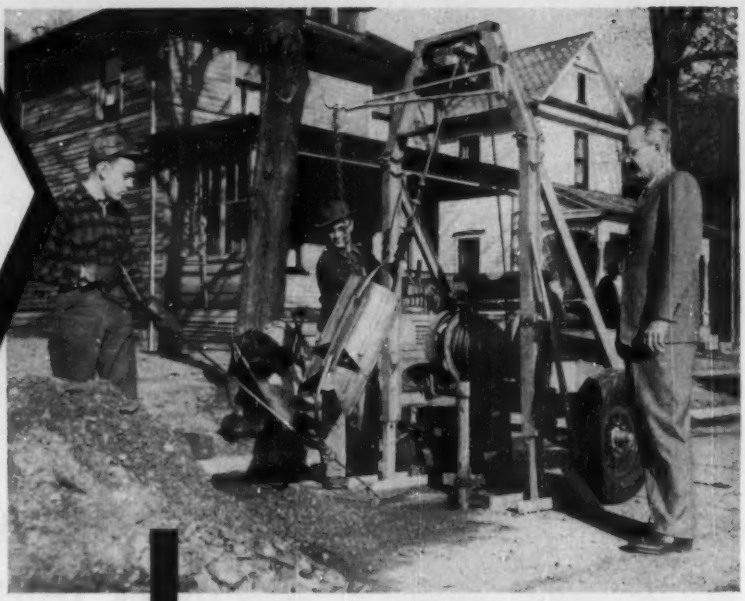
Designed, Engineered and Manufactured jointly by SHERMAN PRODUCTS, Inc., Royal Oak, Mich. WAIN-ROY CORPORATION, Hubbardston, Mass.
Patent No. 2,303,825. Other patents pending.

Another

TYPICAL TOWN

saving money with

"Flexibles"



Franklin, Pennsylvania, is one of many typical American towns that use "Flexible" sewer-cleaning equipment. Shown is a Model 23R6 "Flexible" Power Bucket Machine – the pile of dirt representing "part of one day's work!" Wm. May, in charge of sewer maintenance, is operating the machine . . . while Mayor-Elect R. R. Bleakley, presently Chairman of the Streets and Sewer Committee, watches the operation. Mr. Bleakley, together with Mr. J. McKee Snow, City Engineer, was largely instrumental in choosing "Flexibles," after careful tests. The need for "Flexibles" was so great that two shifts are being used to clean the city's sewers. Here is a city that is so greatly pleased with the results they recommend "Flexible" equipment highly.

Write for our **FREE** *Catalog*

Flexible **SALES CORPORATION**

3786 Durango Ave., Los Angeles 34, Calif.

(DISTRIBUTORS IN PRINCIPAL CITIES)

AMERICA'S LARGEST LINE OF PIPE CLEANING TOOLS AND EQUIPMENT

For *Economical* Maintenance

COLE ELEVATED TANKS

• Design plays an important part in tank maintenance. Experienced engineers design Cole tanks for easy access and minimum maintenance costs, as well as for permanence, safety, and dependability. Send us your inquiries for tanks 5,000 to 2,000,000 gallons—stating capacity, height to bottom, and location.

Write for the latest Cole catalog—"TANK TALK"

Established 1854

R. D. COLE MFG. CO.

NEWNAN, GEORGIA

ELEVATED TANKS • VESSELS • CYLINDERS
TOWERS • BINS • STANDPIPES

Newest, Most Beautiful Hotel in **MIAMI**

The ultimate in modern design for luxurious living. All rooms have individually controlled air-conditioning, radio, circulating ice water.

Combination sleeping and sample rooms. Sales meeting rooms and convention facilities available.

Convenient to shopping, night clubs, air line terminal, fishing and all activities. Write us today.

WILLIAM F. USNER, MANAGER

BISCAYNE *terrace* **HOTEL**

340 BISCAYNE BLVD.

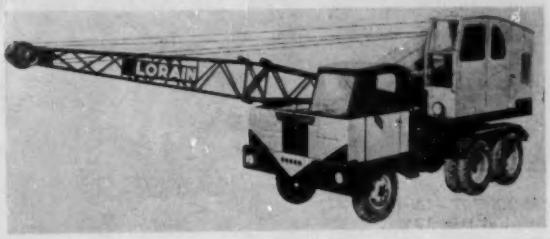
MIAMI, FLORIDA

Introduces Low-Cost Shovel-Crane

A new rubber-tired shovel-crane, the 6-ton Lorain TL Moto-Crane, Model MC-104, is offered by the Thew Shovel Co., and is said to be the lowest priced Moto-Crane available. Like its predecessors, it is easily converted into shovel, hoe, clamshell or dragline.

Equipped with a 6-cylinder, 112-hp Ford motor, the unit has 8 forward speeds up to 45 mph and 2 reverse speeds. Power applied to both rear axles provides a 6 x 4 carrier. The front axle is spring mounted, while rear axles are mounted on rocker beams for smooth traveling on rough ground.

The Thew Shovel Co., Lorain, Ohio, will send complete information on request. Write directly, or you may use the Post Card on the colored page in this section. Circle No. 720.



Good flotation for soft-ground travel is provided by 10 large, heavy-duty tires.

Wallace & Tiernan Announces Merger

Wallace and Tiernan, Newark 1, N. J., began the new year by merging with the Novadel-Agene Corp., to form a single organization, Wallace & Tiernan, Inc., reports Martin F. Tiernan, chairman of the board. Subsidiaries of the new company include W. C. Hardesty Co. Inc., Richmond Mfg. Co., Thomson Machine Co., Electro Rust-Proofing Corp. (N. J.), and Wallace & Tiernan Ltd.

According to Mr. Tiernan, the merger should give the new firm a broader base, combining Wallace and Tiernan equipment, engineering and pharmaceutical lines with the Novadel flour milling and chemical lines. The former company is best known through its chlorinators and chemical feeding equipment for municipal water works, and sewage and waste treatment plants.

Detectron Appoints New York Distributor

The Radiac Co., Inc., 489 Fifth Ave., New York 17, N.Y., is scheduled to handle the distribution of a complete line of Detectron products in the New York area, according to a recent announcement. Located at 5420 Vineland Ave., North Hollywood, Calif., the Detectron Corp. manufactures electronic metal and pipe detectors, Geiger counters and water leak detectors.

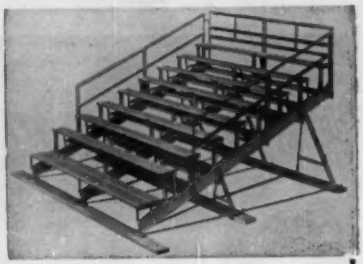
HUSSEY SAFE SEATING

Ironworkers Since 1835

PORTABLE SEATING FOR EVERY OCCASION

With Hussey Patented Portable Steel Bleachers and Grandstands, one set of seats will take care of both your indoor and outdoor needs. They cannot collapse and can be erected and taken down faster and easier than any other stand on the market. Low in cost. 6, 10 and 15 tier 12 foot sections in stock. Other sizes to order.

FREE catalogs and complete information on request. Write today.



Single Section — Model 8 Portable Steel Grandstand

Hussey Mfg. Co., Inc. • 546 R.R. Ave • N. Berwick, Me.

Also Mfrs. of Water Sports Equipment, Flag Poles, Fire Escapes and Misc. Iron.

DAY IN and DAY OUT Your Unconditionally Guaranteed

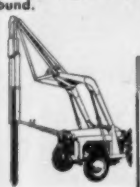
Davis Loader

WILL DO MORE JOBS BETTER THAN ANY OTHER LOADER

There's no time out for this work horse. Convenient attachments give it year 'round useability. Exclusive features such as 12-minute attachment, box frame construction oil filter, adjustable arms that keep bucket in correct position with ground and others make it your best buy.

SHOVELS AND LOADS Leaves, snow, dirt, and trash are easily cleared and loaded with either material or utility bucket.

DOZES Dozer has 62" blade. Skid shoe extends full length. Permits hydraulic control of bite.



DRIVES POSTS Powerful post driver can be operated by one man. Drives 10' high to 5' below ground.

BUSTS CONCRETE, ETC. The handy concrete buster is made by simply attaching a chisel plate to post driver hammer. Has multitude of uses.

LIFTS BULKY MATERIAL Heavy-duty crane is invaluable for lifting all types of bulky material.

SEND THIS COUPON FOR COMPLETE FACTS

Dept. A

Please send me literature on the Davis Loader to fit a _____ model tractor.

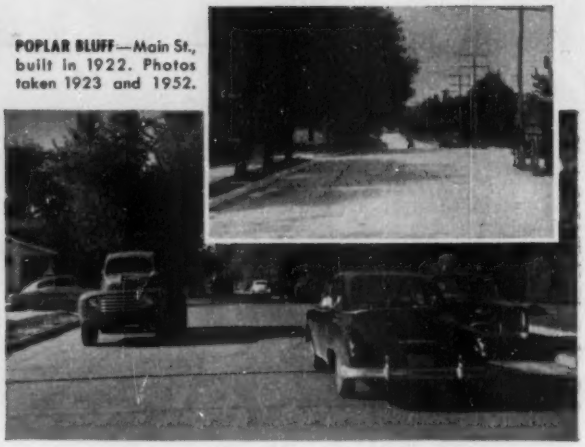
NAME _____

ADDRESS _____

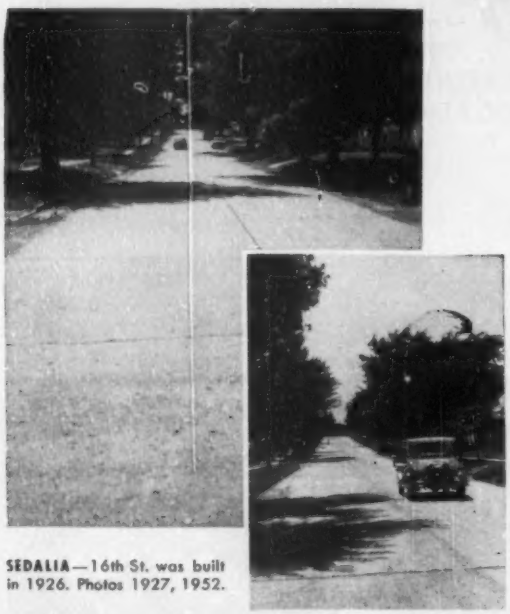
CITY _____ STATE _____

MID-WESTERN INDUSTRIES, INC. 1009 S. WEST ST., WICHITA, KAN.

FARMINGTON—Liberty St., built in 1926. Photos 1927, 1952.



POPLAR BLUFF—Main St., built in 1922. Photos taken 1923 and 1952.



SEDALIA—16th St. was built in 1926. Photos 1927, 1952.

Here today—*and still here tomorrow*

that's the story of Missouri's CONCRETE streets

Motorists, taxpayers and city officials in the "Show Me" state can be proud of the long service of their concrete streets. Many, like those shown here, have served for more than 25 years and are good for many more years.

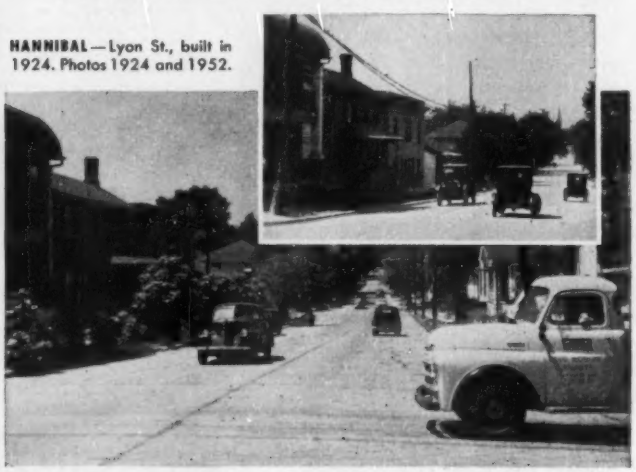
Such dependable service is typical of concrete pavements all over America. Today, because of improvements in design, materials and construction methods, concrete pavements can be built to give even better service.

Concrete pavements also are safest. Concrete's gritty, skid-resistant surface permits *quick* stops—wet or dry. Its light color makes for maximum visibility at night. *If you can't see you can't be safe!* Its low crown and freedom from ruts and washboard ripples permit better vehicle control.

For more information on designing and building long-lasting, safe, ***low-annual-cost*** concrete streets write for free, helpful literature. Distributed only in U. S. and Canada.

PORTLAND CEMENT ASSOCIATION
Dept. 2-4, 33 West Grand Avenue, Chicago 10, Illinois
A national organization to improve and extend the uses of portland cement and concrete through scientific research and engineering field work

CARTHAGE—Grant St., built 1916. Photos taken 1923, 1952.



HANNIBAL—Lyon St., built in 1924. Photos 1924 and 1952.

New 2-Car Parking Meter

A new Twin-O-Matic parking meter distributed by The Karpark Corp. that times two cars can be adjusted to use a combination of pennies and nickels, nickels and quarters, or dimes only.

The coin operates the signals and starts the meter. As the mainspring is used only to run the timing clock, and not to set the meter in operation, the time that the meter can operate before rewinding is considerably increased.

The two mechanisms are separate and interchangeable. A push on a button changes the timing of the mechanism, and any time combination is available. Changes for different coins are accomplished by adjustments with a screwdriver. The collector simply unlocks the coin compartment and out pops the filled box into his hand.

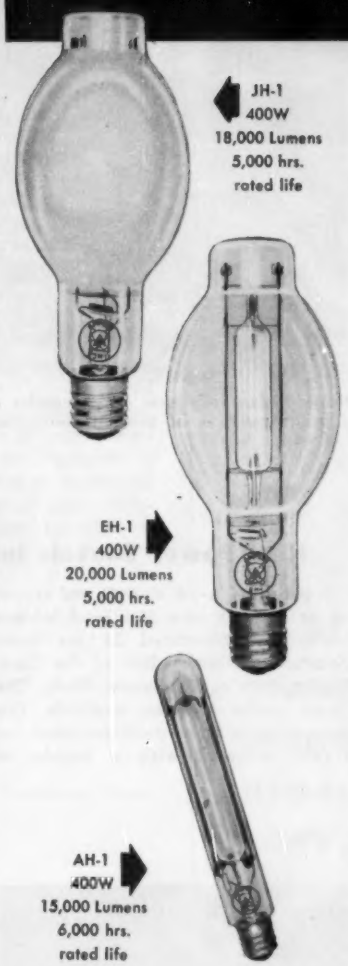
For uniformity, a companion meter, the Unimatic, is also available for street ends and special single locations. It is a single meter using the same mechanism as the Twin-O-Matic. The Unimatic can also be purchased for large, single space installations.

Made by The Karpark Corp., the new Twin-O-Matic will operate with a combination of pennies and nickels, nickels and quarters, or dimes only.

Both meters are made for The Karpark Corp., Cincinnati 6, Ohio by The Herschede Hall Clock Co. The Karpark Corp. will send additional data on request. Write directly, or use the Post Card located for your convenience on the colored page in this section. Circle No. 727.

STREET LIGHTING GOES MODERN!

WITH AMPLEX MERCURY VAPOR LAMPS



TWICE AS MUCH LIGHT for the same wattage consumed... double the illumination with no boost in the lighting bill. Burning life several times longer than incandescents. That's what municipalities and utilities get with the new Amplex Mercury Vapor Lamps for street lighting... and it adds up to completely new lighting efficiency and extraordinary economies.

Amplex Mercury Vapor Lamps are made in three types, the ever-popular EH-1 and AH-1, and the highly important new JH-1 which is color-corrected by means of a special phosphor coating that produces a warm, neutral light and abolishes all need for color-correcting incandescents. Performance facts of all three lamps are shown under their respective illustrations.

For the full story on Amplex Mercury Vapor Lamps and for detailed information regarding their practical application, write **Amplex Corporation, Department K-2, 111 Water Street, Brooklyn 1, New York.**

AMPLEX

Sealed-Beam Reflector Lamps, Colorbeam Lamps, Spotlites and Floodlites, Industrial Infra-Red Heat Lamps, Vibration and Rough Service Lamps, Street Lighting Lamps, Traffic Signal Lamps, Incandescent Lamps, Fluorescent Tubes, Display Accessories.

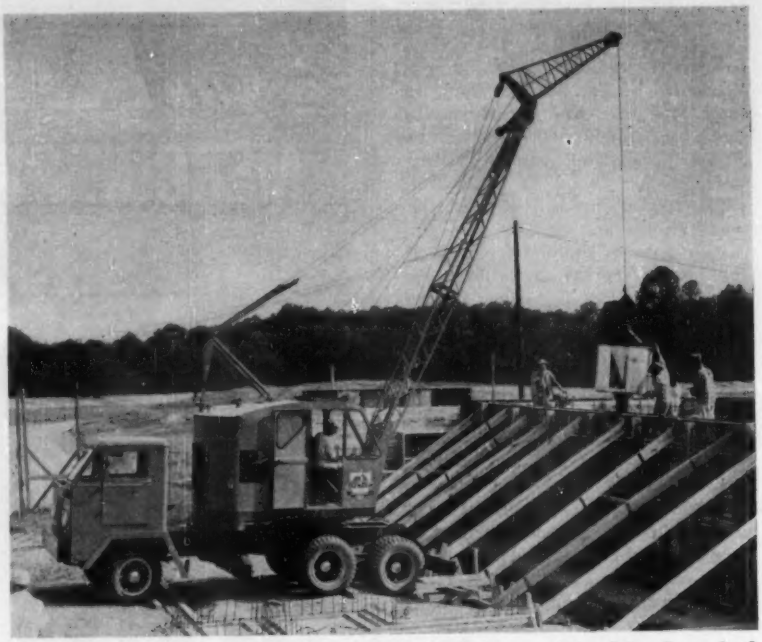
New Crane Carrier For Model T-35

An addition to the line of trucks available for mounting the Model T-35 Schield Bantam is this new crane carrier, featuring a 12-in. I-beam frame, 26,000-pound rated rear axles and large tires. The unit has a short, 16½-ft. turning radius, and a one-man driver's cab with 6 windows, offering complete visibility.

An interesting feature of the new carrier is the differential lock-out on the driving axles, placed there to assure the driver of positive drive from both axles. This positive drive is achieved under any ground condition. Other advantages include a 148-in. wheelbase, 4-wheel drive, 10 wheels with 8:25 x 20 tires, and a 282 cu. in. industrial type gasoline engine developing 113 hp at 3,200 rpm. A 5-speed transmission with dual range provides up to 10 speeds forward and 2 reverse.

Schield Bantam makes only one-size shovel crane, a ⅜-yd., 5-6 ton rig. A wide variety of mountings, however, are available, including the new crane carrier, a crawler undercarriage, and completely remanufactured trucks.

The crane carrier is described in detail in literature from the Schield Bantam Co., 234 Park St., Waverly, Iowa. Write directly, or you may use the Post Card on the colored page in this section. Circle No. 737.



Schield Bantam's new crane carrier offers the driver positive drive from both axles, regardless of ground conditions.

New Power Shovels Include Special ¾-Yard Unit

A series of ¾-yd. shovels and cranes as well as six new front-end loaders have been introduced by the Construction Machinery Div. of the Clark Equipment Co., Buchanan, Mich. The ¾-yd. units will be available this Spring either truck-mounted or crawler-mounted with a variety of front-end attachments. Controls are air-ram operated, with separate controls for each operation.

Truck-mounted models of the ¾-yd shovel are designed with a 6 x 4 or 6 x 6 drive and optional power steering. Telescoping rear and center outriggers are standard equipment.

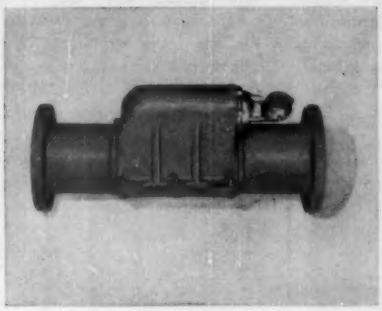
The crawler is equipped with automatic spring-loaded, self-locking brakes, which are disengaged by air-rams when traveling.

Clark's new line of front-end loaders, Michigan Tractor Shovels, range in size from the Model 12-B with a capacity of 15 cubic feet, to Model 175-A with a 2¼-cubic yard capacity. Three major types are announced: a 2-wheel drive with front wheel drive and rear wheel steer, 2-wheel drive with rear wheel drive and front wheel steer, and a 4-wheel drive with rear wheel steer. Like the new ¾-yd. shovels, these units will be available for delivery in Spring.

For complete information on the new shovels and cranes or new front-end loaders, write the manufacturer direct, or use the Post Card located on the colored page in this section. Circle No. 732.

The new Michigan ¾-cubic-yard power shovel, crawler model C-24.

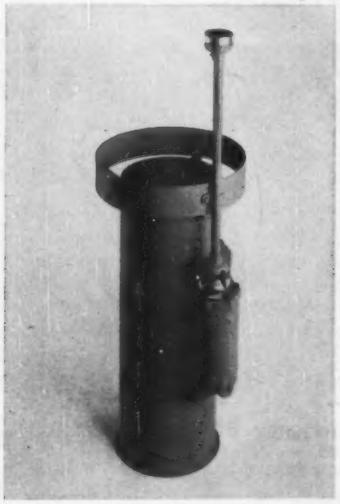
New Meter Design Performs Two Functions



Line Meter

Attach this new meter to a horizontal pipe and you have a new main-line meter that is useful to any water works. Attach it to a vertical riser and you provide a meter useful to the irrigation industry. The two models of this meter are essentially similar in design and represent the most recent addtion to the line of water meters manufactured and sold by the Hersey Mfg. Co. of South Boston, Mass.

The new meter design represents years of experiments and tests by the company. These tests have resulted in the Model MH, a Line Meter well suited to measuring water pumped from wells or flowing through pipes under pressure, and Model MV, an Irrigation Meter intended for



Irrigation Meter

vertical installation to measure water flowing under low head to open distribution ditches.

For full information on Hersey's Line, and Irrigation Meters, address the manufacturer direct, or take advantage of the Post Card located for your convenience on the colored page in this section. Circle No. 726.

THESE NEW TYPE... TRAFFIC SIGNS

AFFORD the SAME SERVICE at ½ the COST!

"EZ-ON" SIGN FACES by GRACE ARE APPLIED RIGHT OVER YOUR PRESENT SIGNS

1. You slip 'EZ-ON' Faces over old sign. *Note Wide Flanges.*

2. Then bend lange backward holding 'EZ-ON' Face in place.

3. Use special Crimping Tool to clamp flange and secure sign.

"EZ-ON" FACES BEING APPLIED at 6th & WASHINGTON in PADUCAH, KY.

SAVES TIME AND LABOR ... EZ-ON faces attached in only 5 minutes ...without taking old sign out of service!

STANDARD WARNING and REGULATORY COPY...

Here's a new idea in traffic signs that saves time and money! Now in use by Highway Departments in Kentucky, Ohio, Iowa, Missouri, meeting all requirements in reflective qualities and serviceability. They slip over your present signs restoring their 'newness', hence your old signs are never out of service. May be applied in 5 minutes! (See illustrations). 'EZ-ON' Sign Faces are made of 30 ga. steel in 2 shapes ... Diamond and Octagon, 24 in. and 30 in. sizes. Standard and Special copy as you may require. INVESTIGATE...and save!

THEY'RE REFLECTORIZED

SEE YOUR NEAREST REPRESENTATIVE OR WRITE US DIRECT

GRACE SIGN & MFG. CO.
3600 S. SECOND ST.
ST. LOUIS 18, MO.

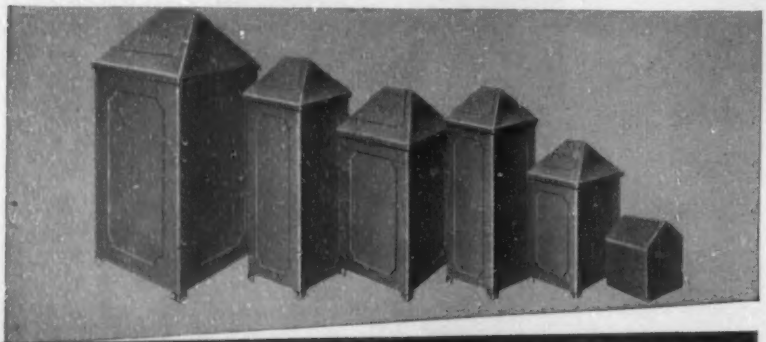
Simplifies Difficult Sewage Tests

Dissolved oxygen determinations, the pay-off test in sewage treatment or stream-pollution work, has been reduced to dip-stick simplicity with the new Ardco Polarograph, a product of General Laboratory Supply Co., P. O. Box 2607, Paterson, N. J.

This compact, portable, easy-to-operate unit was featured at the recent FSIWA meeting in Miami, Fla. The new model, costing only $270, is self-contained and battery-operated. It will measure any reducable ion such as nitrate or copper, and is simple enough in operation to permit the operator to use it confidently. Aside from its usefulness in dissolved oxygen determination, the Polarograph may be used to determine oxygen utilization rates as well.

Another interesting instrument exhibited at the meeting was a magnetic mixing table. Liquids in a beaker or flask could be mixed thoroughly on this table by placing a small mixing bar in the container. A rotating magnet in the table would then spin the bar, mixing the liquid.

For detailed literature, address the manufacturer direct, or you may use the Post Card on the colored page in this section. Circle No. 724.



Setting a NEW Pace . . . with the NEW

SOLAR Self-Closing Waste Receptacle

the ORIGINAL Self-Closing Waste Receptacle

7 SOLAR FEATURES

Safe to Use
Cuts Overhead
Cuts Cleaning Costs
Cuts Plumbing Expense
Reduces Fire Hazard
Quiet in Operation
Withstands Tough Usage

Refinement of design and engineering techniques are fully expressed in the beautiful new "200" series of SOLAR Waste Receptacles.

The gravity swinging top, exclusive with the SOLAR, assures increased sanitation and safety under the most rigorous working conditions.

Solar-Sturges Waste Receptacle Div., PRESSED STEEL CAR COMPANY, INC., Melrose Park, Ill.

PSC

SEND FOR BULLETIN

Solar-Sturges Div.
Pressed Steel Car Company, Inc.
Melrose Park, Illinois

Dept. B-3

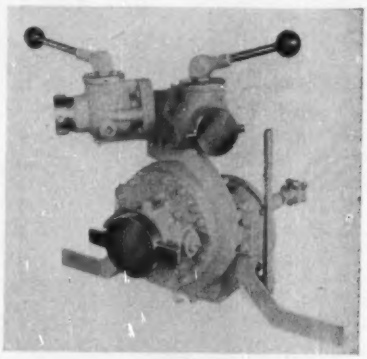
Gentlemen:
Please send me literature on Solar's new line of self-closing waste receptacles.

Name.....
Firm Name.....
Address.....
City..... Zone.... State.....

A New Front-Mounted Fire Pump

Model CF-3, the new 500 gpm Class A single-stage, front-mounted centrifugal fire pump introduced by this company, features, among other advantages, a single plate, dry, automotive type clutch that can be engaged or disengaged at any speed. The pump remains in or out of gear until you change it. It has an operating lever that may be located for convenience on either side of the unit.

Also included in Model CF-3, are a hydraulically and mechanically balanced bronze impeller, with a stainless-steel shaft and grease-lubricated ball bearings. Valves and primers are similar to those used on the company's larger size pumps.



Operating lever may be located on either side of the new pump.

For additional information, write directly to the Waterous Co., St. Paul, Minn., or you may use the Post Card on the colored page in this section. Circle No. 719.

New Iberia, La., Installs Two Water Tanks

Elevated steel water tanks similar to the 250,000-gallon tubular leg structure pictured here, are now being constructed in municipalities throughout the country.

This particular unit is one of two identical tanks installed as part of a water-works plant at New Iberia, La. Both tanks were designed, fabricated and erected by the Chicago Tank and Bridge Co., and installed by the Central Louisiana Electric Co.

For full information, write the Chicago Tank and Bridge Co., Empire Bldg., Rockford, Ill., or use the Post Card on the colored page in this section. Circle No. 738.

Reflective-Pavement Discs

Prismo Plastix can be purchased in any amounts to suit your needs, and comes complete with Plastix discs or blocks, adhesive, and adhesive solvent. The discs or blocks are impregnated with Prismo optical glass spheres for reflectivity day and night in any weather. They are installed by applying adhesive to Plastix, adhesive to pavement, pressing Plastix into place, and rolling down.

The 3- x 6-in. Plastix block is suited for stop bars, cross-walks, zone marking, parking stalls, and for permanent indicators at the start and end of "No Passing" zones. Word pavement marking kits are available with standard legends such as STOP, SLOW, THRU LANE, LEFT TURN, RIGHT TURN, SCHOOL and DO NOT ENTER.

Write for full details on these units, also for *Bulletin PX-53* describing the pavement discs, to Prismo Safety Corp., Huntingdon, Pa., or use the Post Card in this section. Circle No. 725.

New Location for Heil District Office

District offices of The Heil Co., have been moved from Hillside, N. J., to 2095 Route 22, Union, N. J., reports Robert J. Rose, eastern district manager for the firm. The move is intended to separate the eastern district sales offices from Heil's Hillside factory operation.

With main offices at 3043 W. Montana St., Milwaukee 1, Wis., The Heil Co. also operates two factories in Milwaukee, which together with the Hillside plant manufacture road machinery, bodies and hoists, and transport and storage tanks.

no problem with water pressure in Newark!

Since 1934, by using cement lining in its trunk mains, Newark's water flow has been boosted from 57 to 83 million gallons a day.

This was made possible by converting old pipes into new—free of tuberculation and interior corrosion. Here's how it was done: old pipes were hydraulically cleaned, centrifugally machine-lined with mortar cement and smoothed to an even surface. The result: distribution pressure and carrying capacity greatly increased, maintenance costs substantially lowered and life expectancy of pipes extended indefinitely. Entire process done with pipes in place at a *fraction* of the cost of laying new pipes.

CENTRILINE CORPORATION

A subsidiary of Raymond Concrete Pile Co.

140 CEDAR STREET, NEW YORK 6, N. Y.

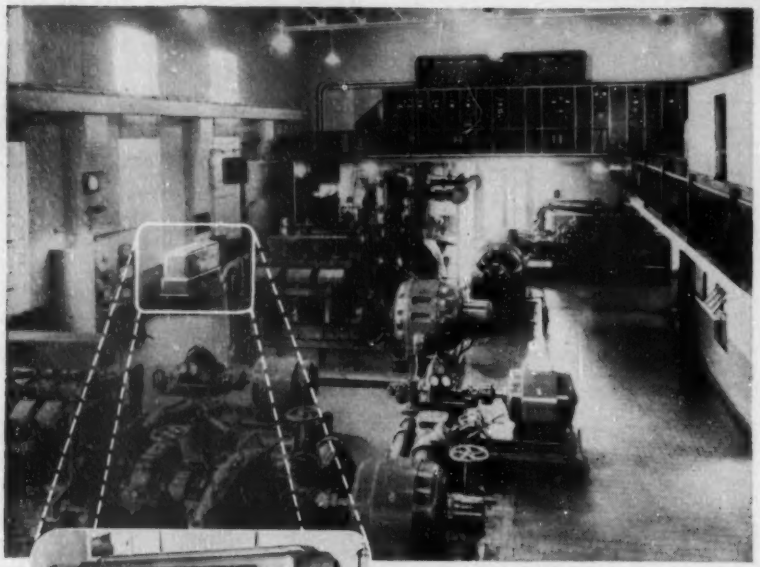
Branch offices in Principal Cities of United States and Latin America

3,000,000 FEET OF EXPERIENCE

Write today for booklet!

CEMENT-MORTAR LINING OF PIPES IN PLACE

How Dubuque insures uninterrupted operation of its pumping station



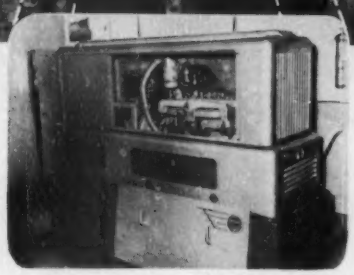
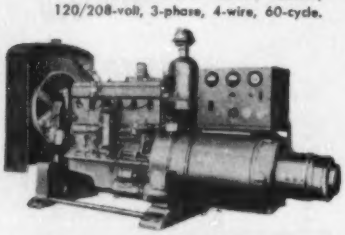


Photo of Dubuque (Iowa) installation shows Onan Model 25HN, 25KW, 120/208-volt, 3-phase, 4-wire, 60-cycle.



New Onan 50KW Standby Plant

The Onan Model 50KA is designed for emergency use in pumping stations, sewage lift stations, civil defense or any installation with heavy load requirements. Write for specifications.

Continuous operation of Dubuque's Eagle Point water pumping station is assured during electric power interruptions by an Onan 25,000-watt, Model 25HN-4R Standby Plant. Five times since the Onan unit was installed in April, 1952, it has automatically cut in and furnished all the electric power for the following essential equipment: One ¼ h.p. electric motor for the station's oil burner, one ¼ h.p. electric motor for the condensate pump, four ⅓ h.p. and two ¼ h.p. motors for heating unit blowers, and thirty 200-watt lights for lighting the building.

The gasoline-driven standby plant also powers this additional equipment during extreme emergencies such as floods: Two 5 h.p., three 1 h.p. and six ⅓ h.p. electric motors for sump pumps and one 5 h.p. motor for priming the main pumping units.

Dubuque is one of the many communities and municipalities throughout the United States that is protected against power outages by Onan Standby Electric Power.

Write for Standby Folder and Engineering Assistance

D. W. ONAN & SONS INC.

ELECTRIC PLANTS

8361 University Avenue S. E. • Minneapolis 14, Minnesota

About People

You know or should know

Jack F. Fuller is scheduled to succeed the late Harlow T. Judson as branch manager of the Portland, Ore., office of the **Hersey Mfg. Co.**, South Boston, Mass. Mr. Fuller joined Hersey in 1948 as a salesman for the company's water meters, and is on the membership committee of the Northwest Section AWWA. The company also informs us of an addition to its sales department, John H. Snellgrove, one-time member of the **Elgin Softener Corp.** He'll be attached to Hersey's Los Angeles branch.

J. F. Fuller

J. H. Snellgrove

What better title for Joseph P. Lawlor, recently inaugurated Mayor of Ames, Iowa, than "Water Mayor of America." The new official, long associated with the design, construction and installation of municipal water conditioning equipment, is the well-known president of the **General Filter Co.**, located in the City of Ames.

When William A. Bauer takes over as president of **The Baker-Raulang Co.**, Cleveland, Ohio, he will be assisted by a new executive vice-president, Charles N. Sumwalt, Jr., former vice-president of the company's eastern sales division. Mr. Bauer, Baker-Raulang board chairman since 1951, succeeds the recently-retired president, James W. Moran.

Sargent-Sowell, Inc., Grand Prairie, Texas, announces the appointment of C. M. Wrotenbery as general manager. This company manufactures a full line of municipal signs.

The Worthington Corp., Harrison, N. J., will miss the services of Paul Diserens, an active member of the firm since 1909. To show its appreciation, Worthington honored the recently retired consulting engineer with a testimonial luncheon at the Essex Club where he was presented with a 45-year-service pin, a television set, and an engrossed copy of a declaration commending his loyalty. Mr. Diserens is remembered for his work in developing the Worthington Feather Valve, and for his many contributions in the development of high-pressure compressors for the U. S. Navy.

Metcalf & Eddy, consulting engineers located in Boston, Mass., announce the admission of a new partner to the firm, Harry L. Kinsel. At last count the Metcalf & Eddy partnership consisted of nine engineers.

Another organization of consulting engineers, **O'Brien & Gere,** of Syracuse, N. Y., report the addition to the firm of three associate members: Samuel J. Grosso; Frank A. Loguidice and Joseph I. Phillips. The new associates all belong to the New York State Society of Professional Engineers.

One of the duties of Hugh M. Little, new vice-president of the **Le Roi Co.,** Milwaukee, Wis., will be to coordinate activities between Le Roi and its parent firm, the **Westinghouse Air Brake Co.,** according to T. O. Liebscher, president of Le Roi. Mr. Liebscher further announces a new works manager, Norman J. Kimber, to take charge of manufacturing operations at the company's Milwaukee plant.

The retirement of D. R. Donlen after 30 years with **The Texas Co.,** New York, N. Y., resulted in the selection of a new manager for the firm's Asphalt Sales Dept. According to company officials, this post was filled recently by T. R. Ellis, associated with the firm since 1936. Mr. Ellis began his career with the Engineering Dept. of the City of Denver, first as project engineer, and later as assistant chief materials engineer. With the Texas Co. he filled such positions as assistant manager of the Chicago Div. of the Asphalt Sales Dept., manager of the Chicago Div., and manager of the New York Div.

Arthur C. Knorr, president of **J. Frank Knorr, Inc.,** Miami, Fla., is one of the men appointed to supervise the distribution of Nordberg type 4FS engines in Southern and Central Florida, according to a recent announcement. Another is Frank Knorr, Jr., president of the company's affiliate, J. Frank Knorr of Tampa, Inc. Both distributors were recently appointed by the **Nordberg Mfg. Co.,** Milwaukee, Wis.

Leaving his position with the Bethlehem, Pa., water and sewage treatment department, Glenn C. Wanich joins the **Fischer & Porter Co.,** Hatboro, Pa. where he will take his place in the field force of the company's Chlorinator Div. He'll serve Fischer & Porter in Eastern Pennsylvania and Western New Jersey, with headquarters at Bala, Pa.

G. C. Wanich

A. B. Crossman, long associated with the **National Meter Co.** and then with the **Rockwell Mfg. Co.,** informs us that he is now a special representative for the sales organization of the Calmet Div., **Well Machinery and Supply Co., Inc.,** Fort Worth, Texas. Mr. Crossman expects to handle Division sales in Louisiana and South Texas.

From **Dempster Brothers, Inc.,** Knoxville, Tenn., comes news of a new district representative to handle the sale of Dempster equipment in the company's north middle western territory. He is Ken J. Shedd, former sales manager of the Load Packer Div., **Gar Wood Industries, Inc.** The new representative gives Tulsa, Okla., as his future headquarters.

K. J. Shedd

The staff of **V. H. Blackinton & Co., Inc.,** of Attleboro Falls, Mass., was saddened by the recent death of 41-year-old James G. Kay in an automobile accident in Exeter, N. H. Mr. Kay, who began his association with the firm in 1941, was assistant sales manager for Blackinton police and fire badges.

A new vice-president will take charge of protective coating sales for the **Amercoat Corp.,** South Gate, Calif. He is D. O. Lachmund, who, in the past 13 years, has served Amercoat as sales engineer, advertising manager, and finally as eastern region manager. He'll establish headquarters at the firm's home office in South Gate, Calif.

D. O. Lachmund

The start of the new year saw the retirement of Charles H. Gurney from his position as manager of New York sales for the **Crouse-Hinds Co.,** Syracuse, N. Y. A 40-year veteran of the company, he is succeeded by Arthur F. Uhrlandt, who will supervise Crouse-Hinds sales in New York State, Connecticut, Northern New Jersey and Western Vermont. Other company appointments include those of Richard F. Kidwell as regional manager for metropolitan New York, and Charles Knox, new manager of the firm's Philadelphia Division.

Another on the list of retired company officials is J. B. Woodward, Jr., president of the **Newport News Shipbuilding and Dry Dock Co.,** Newport News, Va. William E. Blewett, Jr., former executive vice-president, has been elected to succeed him as the firm's chief executive officer. Additional news from the company advises us of a new executive vice-president and general manager; N. L. Rawlings, as well as a new financial vice-president and comptroller, R. I. Fletcher.

When the **Joseph Dixon Crucible Co.,** Jersey City, N. J., revised its basic industrial sales districts, it chose a new manager, Ralph C. Gough, to handle the expanded Northeast District, and another, R. E. Goodfriend, for the company's new Atlantic District. Dixon's Central District will now be directed by Emory C. Bleam, while R. C. Brock continues to manage the company's Western District.

Five new vice-presidents, all senior department heads, joined the official family of the **Dorr Co.,** Stamford, Conn. They are Frank H. Conover, manager of the Procurement and Production Dept.; Harold B. Coulter, head of the Mechanical Engineering Dept.; John D. Grothe, of the Consulting Engineering Dept.; Douglas C. Reybold, Dorr's controller and director; and Dr. Elliott J. Roberts, technical director in research, development and the Westport Mill. Mr. Grothe was also elected a director of the firm.

At the **Warren Foundry & Pipe Corp.,** New York, N. Y., a new district manager, Anthony Santandrea, was appointed to handle the company's New York sales. Mr. Santandrea is a former member of the **Central Foundry Co.**

We were sorry to learn of the death of D. Birney Stokes at his home in Edgewater, N. J., last month. Mr. Stokes, who retired from the **United States Pipe and Foundry Co.,** Birmingham, Ala., in 1952, has been associated with that firm for 42 years, serving as vice-president in charge of sales since 1926.

PROFESSIONAL SERVICE DIRECTORY

AIR POLLUTION CONTROL
AUSTIN C. DALEY
Air Pollution Engineer
City of Providence, R. I.
Consultant—Surveys and Solutions: Smoke, Dust and Fumes
Municipal Incinerator Design and Correction
29 Weybosset St. Providence 3, R. I.

BARKER & WHEELER
36 State Street Albany, N. Y.
11 Park Place New York City 7
Sewage Disposal
Water Supply
Sewerage
Public Utility and Industrial Valuations and Rates
Power

W. I. BARROWS & ASSOCIATES
Consulting Engineers
Mechanical—Civil—Electrical—Hydraulic
Industrial & Municipal Betterment & Improvements
1169 Reibold Bldg., Dayton 2, O.

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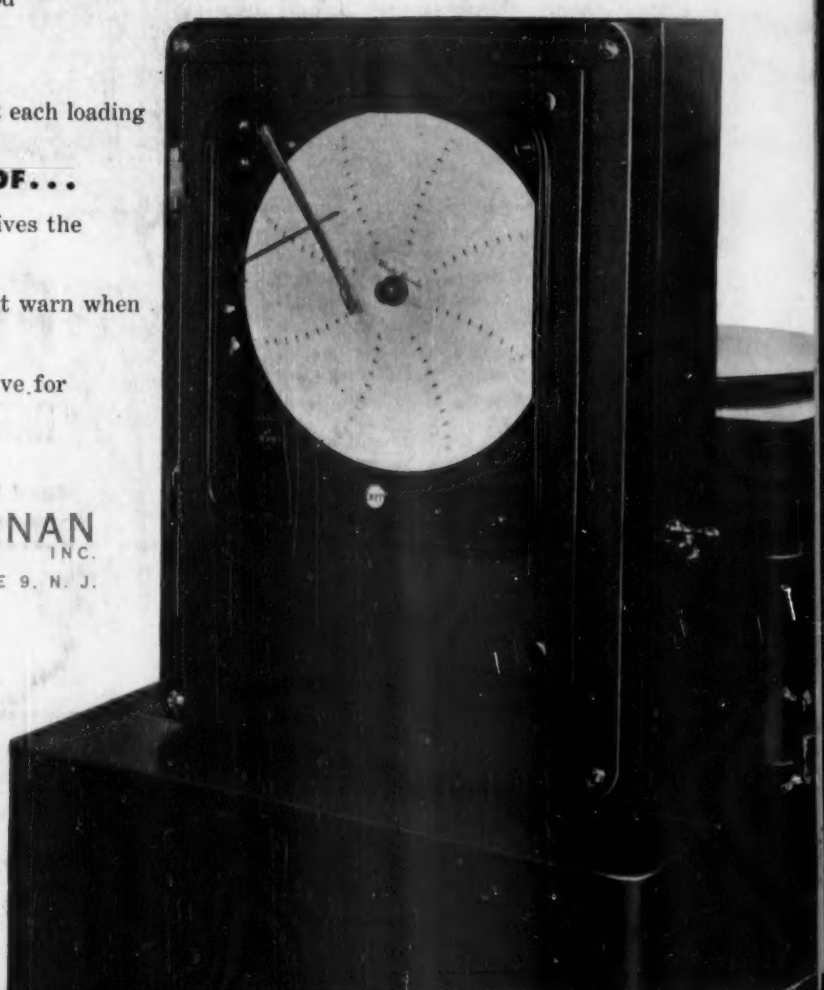

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